Prifysgol De Cymru

University of South Wales

Exploring the informational requirements of optimal pricing decisions in theory and practice; a case study of the automotive industry

Thesis in Candidacy for the Degree of Doctor of Philosophy

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Markus Feldmann, Part Time Student: SU 06251765

markus.feldmann@daimler.com

+49 7307 955 025

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“Sometimes you will pay the highest price for things, obtained for free.“

Albert Einstein

(1879 - 1955)

Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidacy for any degree.

The thesis is the result of my own investigation except where otherwise attributed. Other sources are acknowledged by explicit references. The bibliography is appended.

I hereby give consent for my thesis, if accepted, to be available for photocopying and for interlibrary loan, and for the title and summary to be made available for outside organisations.

Signed  .....

Date 5th May 2014

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To my parents, my wife Sonja and my son Nicolas

Abstract

This thesis deals with pricing and research approaches to determining profit-optimised prices in order to maximise a company's profit.

In literature, several methods to measure willingness to pay have been proposed. However, there is still little knowledge about their reliability in practice and from theory today none of the research approaches appears to show significant advantages. Empirical studies have produced mixed results.

In this thesis, an empirical comparison of two popular research techniques for gathering pricing information in commercial practise was presented for the first time. The Choice Based Conjoint Measurement, one of the most frequently used research approaches in pricing, was compared with a (so to speak) insider tip, the Extended Price Sensitivity Meter by Miller, Newton and Smith (1993).

The analysis in this thesis should deliver a first overview concerning the applicability of the simple and cost-effective direct survey approach in comparison to a high sophisticated and complex research method in commercial practise.

Overall it can be remarked that the discussion of the qualitative hypotheses in this thesis shows that, under certain conditions, the cost effective market research approach the Extended Price Sensitivity Meter could be a usable alternative to more complex methods like the Choice Based Conjoint Measurement. But this method also has limitations. Due to its design, it is not applicable to gathering customer preference with regard to single product features. This should be taken into consideration especially concerning the pricing research in a very early stage of product development.

The major findings within this thesis are:

- From the results the theoretical limitation of the direct survey method with too much focus on price (which may lead to lower price statements) cannot be confirmed.
- The applicability of the Extended Price Sensitivity Meter concerning product innovations should be questionable. In a very early stage of product development where the single technical are not finally defined this method is not applicable. But close to the product launch where the main features are clear it delivers useful pricing information.
- The results show, that the Extended Price Sensitivity Measurement can be applied with customers who are already aware of market prices.

Index of contents

List of figures

List of Tables

1 Introduction and problem definition

1.1 Background

Everyone has to deal with a variety of prices every day. For instance we have to pay rent for accommodation, public transportation companies, airlines or taxis charge a fare for their service, and local banks charge an interest for money borrowed. (Kotler, P., Keller, K., 2006, p. 432)

This thesis deals with pricing and research approaches to determining profit-optimised prices in order to maximise a company's profit.

In theory profit is defined as: *Profit = (price x sales volume) - cost*. The profit formula then consists of three basic drivers: price, sales volume and cost. (Simon, H., Fassnacht, M., 2009, p. 2, Herr, S., Oswald-Chen, F., Ying Yang, 2007, p. 120) "Price is the only value driver that has a stronger leverage effect than costs and volume. Compared to costs, price as a value driver has three basic advantages: lower investment costs, fast implementation and a direct impact on profit." (Herr, S., Oswald-Chen, F., Ying Yang, 2007, p. 120)

"With regard to price as one of the main drivers of profit, the determination of the profit-maximising price should be a vital topic in marketing practise." (Backhaus, K. et. al., 2005, p. 543) Pricing is a fundamental task in marketing, depending on its importance because price drives profits. (von der Gathen, A., 2007, p. 36, Simon, H., 2004, p. 1089) "Of all the tools available to the marketers, none is more powerful than price". (Han, S., Gupta, S., Lehmann, D. T., 2001, p. 435, cited in: Pechtl, H., 2005, p.8)

Concerning the determination of an optimal (profit optimised) market price, it is essential to be aware of the customer's willingness to pay. (Meffert, H., et. al., 2008, p. 481, Kotler, P., Keller, K., 2006, p. 434, Wertenbroch, K., Skiera, B., 2002, p. 228)

According to Kalish and Nelson (1991) the willingness to pay is defined as the maximum amount of money a consumer is willing to pay for a given quantity of a product. (Voelckner, F., 2006, p. 137) Quantifying the willingness to pay for a product or service, or the extent to which their likelihood of purchase is affected by different potential pricing options, is a difficult research task. (Srinivasan, S., Pauwels, K., Nijs, V., 2008, p. 15)

Especially for newly developed products or services, it is crucial to define the profit optimised price point. Once the price is set too low - below the customers' maximum price point - it is laborious to mark up and potential earnings are lost. (Marn, M., Roegner, E., Zawada, C., 2003a, p.1)

Thus structured research in pricing could be an important factor in respect of higher profits. The following section presents a very brief overview about the market research approaches within the scope of pricing. A detailed discussion of the existing research methods will follow later in this thesis.

1.2 Research problem

In principle it is feasible to determine pricing information with different market research techniques, and then use this information to set optimal prices. The

customer's willingness to pay for example can be researched by poll (surveys), observation or experiment. (Diller, H., 2008, p. 175, Woratschek, H., Roth, S, 2006, p. 378) The following figure illustrates the theoretical framework for methods to measure the willingness to pay.

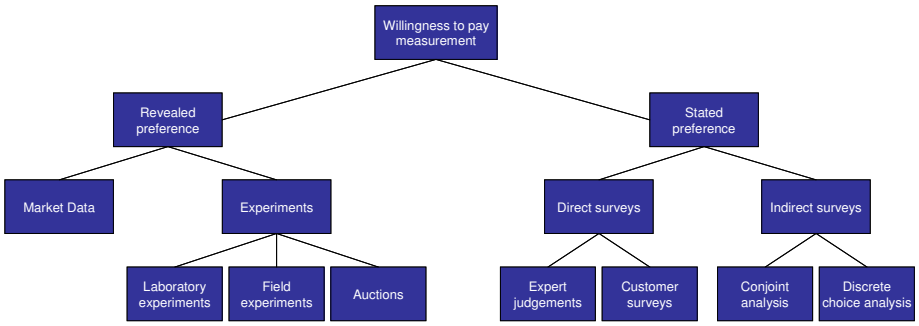


Figure 1: Classification framework for methods to measure willingness-to-pay

(According to: Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 10)

Each research technique offers particular advantages over the others concerning pricing research in respect of accuracy, cost or applicability. (Nagle, T., Hogan, J., 2006, p. 281, Simon., H., Dolan, R., 1997, p. 62) Besides the quality of the received information, the expenditure of time and cost are relevant for an assortment of the research method. The effort in research and analysis should be consistent with the relevance of the required pricing decision. (Simon, H., Fassnacht, M., 2009, p. 142)

Surveys or observations are particularly suitable to establish relevant market data regarding the determination of price-response-functions. (Simon, H., Fassnacht, M., 2009, p. 109, Kotler, P., Keller, K., 2006, p. 478) Besides direct research approaches (i.e. Price Sensitivity Meter), indirect market research methods like Conjoint Measurement are very popular within commercial marketing practise. (Hartmann, A., Sattler, H., 2002, p.1)

Over the last 30 years the Conjoint Measurement method (as a specific type of price preference measurement within the range of poll) is most frequently used within commercial practise. (Breidert, C., 2006, p. 5) For instance Wittink and Cattin (1989) estimate that nearly 400 commercial projects were carried out each year during the early 1980's, with an increasing potential in the 1990's of approximately 1,000 commercial applications per year. (Sattler, H., Hensel-Boerner, S., 2000, p. 121) "Based on a 2004 Sawtooth Software customer survey, the leading company in Conjoint Software, between 5,000 and 8,000 conjoint analysis projects were conducted by Sawtooth Software users during 2003." (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 3)

On the basis of theoretical assumptions and individual empiric studies, Conjoint Measurement is considered to have superiority in validity over simpler and less expensive techniques like self-explicated models. (Sattler, H., Hensel-Boerner, S., 2007, p. 68) For instance in reference to the validity Woratschek (2001) remarks that in the case of direct research methods the respondents may be focused too much on price and other attributes (especially at services) take a back seat.

Wübker (2006) emphasises this hypothesis by declaring that this method contains an unrealistic high price consciousness depending on the isolated consideration of price. "In contrast to self-explicated approaches (i.e. compositional approaches), Conjoint Measurement does not directly ask for part-worth of attribute levels. Instead, conjoint methodology is based on a

decomposed approach in which respondents react to a set of total profile descriptions.” (Sattler, H., Hensel-Boerner, S., 2007, p. 69)

In literature, several methods to measure willingness to pay have been proposed. However, there is still little knowledge about their reliability in practice and from theory today none of the research approaches appears to show significant advantages. (Nitschke, T., Sattler, H., 2001, p. 19) Empirical studies (e.g. comparing Conjoint Measurement with self-explicated models) have produced mixed results. (Hartmann, A., Sattler, H., 2002, pp. 1, 20)

For example a considerable analysis of empirical studies concerning such a comparison by Sattler and Hensel-Boerner (2007) could not confirm the theoretically assumed superiority of Conjoint Measurement. Instead, nearly 80% of empirical comparisons (18 out of 23) delivered either non-significant differences between methods or even higher predictive validity or reliability for self-explicated approaches. (Sattler, H., Hensel-Boerner, 2007, p. 74) Both, Backhaus, Voeth, Sichtmann, Wilken (2005) and Sattler, Nitschke (2003) point out that the applicability of the existing research methods depends on the respective research situation. A general recommendation in respect of a (superior) research approach regarding pricing research is not reasonable. (Backhaus, K., Voeth, M., Sichtmann, C., Wilken, R., 2005, p. 451)

As pointed out, in theory pricing information can be determined by various research methods, like auctions, surveys or expert interviews. (Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 3) Today, the research method Conjoint

Measurement is most frequently used concerning pricing issues. (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 3, Breidert, C., 2006, p. 5)

In commercial practise, however, another research method, the so called Price Sensitivity Meter by the Dutch economist Peter van Westendorp, is often used to determine willingness to pay. (Berekoven, L., Eckert, W., Ellenrieder, P., 2009, p. 277, Diller, H., 2008, p. 188, Voelckner, F., 2006, p. 56).

But because of its design the Price Sensitivity Meter does not allow to measure price-demand functions. (Meffert, H., 2008, p. 538) "Understanding the shape of the demand function is fundamental to managerial decisions, because an incorrect assumption about its shape leads to suboptimal decisions." (Ding, M., Ross, W., Rao, V., 2010, p. 69)

Thus, in pricing studies this method is normally used in connection with the Conjoint Measurement. In this context, the Price Sensitivity Meter is normally used "only" as a plausibility check of the gathered data (for instance to identify upper and lower price limits of the customers).

The idea for the subject of this thesis was therefore derived from experiences with diverse market studies in commercial practice regarding the determination of willingness to pay. Within these market studies, willingness to pay was determined with the research method Conjoint Measurement and the Price Sensitivity Meter (as a plausibility check of the Conjoint results).

An analysis of the data showed that both research methods often delivered similar results concerning e.g. the maximum price or the optimal price point for a product. With regard to cost and time efficiency, this finding is very interesting for marketers in commercial practise. Compared to Conjoint Measurement, the Price Sensitivity Meter requires less costs and time (which will be discussed in chapter 4).

But due to the fact that with the Price Sensitivity Meter no price-demand curve can be determined, an extended version of this research method should be taken into consideration: An extension to the Price Sensitivity Meter by Miller, Newton and Smith (1993). This research approach is commonly used regarding pricing by various research institutes in commercial practise (see the corresponding websites). From theory, however, there is little knowledge about the validity of this method.

The thesis therefore aimed to find out if the approach of Miller, Newton and Smith (“A market acceptance extension to the traditional Price Sensitivity Meter”) is feasible to determine price-demand functions with valid results.

1.3 The need for research

Within this thesis a direct comparison of two research approaches will be presented. Here the direct survey approach “A market acceptance extension to the traditional Price Sensitivity Meter” of Miller, Newton and Smith (1993) will be compared with an indirect method, Choice Based Conjoint Measurement.

Especially comparisons including the extension of the Price Sensitivity Meter cannot be found in the literature. Based on the possibility to derive price-demand curve with this cost-effective method should be discussed. If this approach delivers reliable results then researchers would have an interesting alternative to the well-known (but cost-intensive) research method Conjoint Measurement within commercial practise.

Literature research showed that the validity of direct (i.e. Price Sensitivity Meter) and indirect surveys (e.g. Conjoint Measurement) is intensively discussed in the course of applied pricing research. Between 1980 and 1998 more than 20 empirical studies with regard to a comparison of research methods could be found i.e. in Journal of Marketing, International Journal of Marketing Research, or Marketing Letters. (Sattler, H., Hartmann, A., 2002, p. 1)

The knowledge about the willingness to pay is a key factor in order to set optimal pricing decisions. (Balderjahn, I., 2003, p. 389) In respect of pricing research today Conjoint Measurement is state of the art. (Gustafsson, A., Herrmann, A. Huber, F., 2007, p. 3, Louviere, J., Eagle, T., Cohen, S., 2005,

p. 3, Balderjahn, I., 2003, p. 394) Moreover this research method is also used for various fields of applications like new product planning for determining the preference effect of innovations, market segmentations or to simulate purchasing decisions with a focus on competitors' response. (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 4)

"Not only surveys of the usage of conjoint analysis show the importance of pricing research. Publications of the application of conjoint analysis in scientific journals also illustrate their importance. In a broad review Voeth (1999) summarizes the publications on conjoint analysis in German between the years 1976-1998. Most of the identified 150 studies were published in the 1990s. 31 studies explicitly focused on pricing." (Breidert, C., 2006, pp. 71-72)

Conjoint analysis is still a very popular methodology. (Schmidt, M., Hollensen, S., 2006, pp. 417, 461) The relevance of Conjoint Measurement increased within the last decade. It is used by two thirds of market research institutes. (Sattler, H., Hartmann, A., 2002, p. 11)

Regarding commercial practise another particularly accepted pricing research technique is Price Sensitivity Meter by the Dutch economist Peter van Westendorp. Within this method an acceptable price range is queried, but not a price-response-function. (Meffert, H., 2008, p. 538) In the 1990s Miller, Newton and Smith present an extension to the traditional Price Sensitivity Meter which allows besides the determination of price ranges also

the development of price-demand curves. (Weiner, J., 2002, p. 113) An in-depth discussion of the different research methods will follow in this thesis.

Pechtl (2005) summarises a comparison of existing market research methodologies to show that none of these approaches shows superiority in respect of pricing issues. Meffert, Burmann, Kirchgeorg (2008) recommend to use multiple approaches within pricing research.

The main objective of the thesis is to analyse the different existing market research methods from theory and to discuss their strengths and weaknesses within the scope of pricing, and then to use these in order to discuss a useful (cost- and time-effective) approach to data generation and analysis in commercial practise. The advantages and disadvantages of existing research methods within the scope of pricing will be analysed critically.

According to an economic and applicable market research approach the following question should be analysed: Is it possible to realise an optimal pricing solely based on the results of a time and cost-efficient research technique like the Extended Price Sensitivity Meter? As pointed out, in literature, the reliability especially of direct versus non-direct market research methods has not been scientifically assessed.

The idea is to compare a sophisticated research method like Conjoint Measurement along with the usefulness of a cost-effective method like the Extended Price Sensitivity Meter.

The central theme of this paper will be **"Exploring the informational requirements of optimal pricing decisions in theory and practice; a case study of the automotive industry."**

The focus will be on the analysis of optimal price points in respect of willingness to pay and to determine the maximum turnover. There will be no discussion about predictive market shares, because this would require intense knowledge about the market (competitor prices and customer reactions on price changes etc.) which is not applicable within this thesis.

The qualitative hypotheses which should be discussed in this thesis are displayed in more detail in chapter 5. These qualitative hypotheses will be analysed in respect of their relevance from literature and commercial practise. Here, concerning an overview the qualitative hypotheses are described shortly.

Qualitative hypotheses 1, 2 and 5 were constructed on the basis of the findings from literature. In qualitative hypothesis 1 theoretical limitation of direct surveys regarding a hypothetical bias with too much focus on price should be analysed. Qualitative hypotheses 2 and 5 refer either to a conclusion or a limitation of the direct survey approach Price Sensitivity Meter, stated by the authors of the method.

In qualitative hypotheses 3 and 4, practical questions with regard to pricing research in commercial practise will be discussed. Due to decreasing

research budgets (especially within the business to business (B2B) segment), marketers are forced to conduct useful market information with cost-effective research methods. Therefore, with regard to gathering information concerning pricing issues in practise, an alternative research approach to an established (but cost-intensive and time consuming) method like Conjoint Measurement should be examined.

1.4 Outline and scope of the thesis

The automotive industry will be discussed in chapter 2 subsequent to an introduction concerning pricing (tasks and strategies) within marketing.

Then the existing market research approaches will be analysed. First all relevant techniques will be described in detail followed by a discussion on a theoretical background especially regarding the pros and cons of each method and the different possible applications of the methods in commercial practise.

This discussion should be the basis for the following analysis of two different research approaches (Extended Price Sensitivity Meter and Conjoint Measurement) to gather information for pricing research.

After this detailed review of the theory, an empirical comparison of the two research techniques for gathering pricing information in commercial practise will follow. The analysis should deliver an overview concerning the applicability of a simple and cost-effective research model like the Extended

Price Sensitivity Meter in comparison to a high sophisticated and complex method like Conjoint Measurement.

In literature only few comparisons of direct and indirect surveys can be found. (Hofstetter, R., Miller, M., 2009, p. 5) Moreover in literature there is a lack of studies which analyse the overall quality of Price Sensitivity Meter concerning theoretical adoptions. (Mueller, H., 2008, p. 16)

In this thesis Choice Based Conjoint Measurement, one of the most frequently used research approaches in pricing, was compared with a (so to speak) insider tip, the Extended Price Sensitivity Meter by Miller, Newton and Smith (1993).

The Extended Price Sensitivity Meter, as an example for direct research approaches, was chosen for the empirical part in this thesis because of its simplicity and the capability to derive price-demand functions, which are essential information for a marketer to set prices. Furthermore today this research method is not in the focus of scientific publications. Today in the literature no theoretical comparison of the direct approach Extended Price Sensitivity Meter especially with indirect approaches like Conjoint Measurement in respect of pricing issues can be found. But in commercial practise this technique is used by different also worldwide acting research institutes.

The idea was to find out under what circumstances it is possible to determine market prices by the use of a low-cost alternative like the Extended Price

Sensitivity Meter. Thus the main goal of this thesis is to diminish this academic void.

Consequently this thesis will seek to present a detailed discussion on the results of two different research approaches in respect of pricing. The results should be helpful for marketers to identify a useful market research methodology to gathering information within commercial practise concerning pricing issues.

The empirical study in this thesis was conducted in the context of the aftersales business in the automotive industry. Today the automotive industry is one of the leading industries in the world. (Wells, P., 2010, p. 2) Usually the aftersales division is the key success factor and main profit earner. (Baader, A., Montanus, S., Barkawi, R., 2006, p. 3) Due to the economic crisis and increasing competition in the automotive industry price settings are becoming more and more important.

The empirical part was realised in cooperation with the aftersales division of Daimler Buses. Within personal computer assisted interviews two aftersales related products were presented to the respondents in order to find out their willingness to pay. The results of the empirical test, oriented to the constructed qualitative hypotheses, will be pointed out in chapter 6.

In the last chapter the conclusions and contribution to knowledge will be presented. Furthermore the limitations of the empirical test will be discussed, followed by an outlook for future research.

2 The automotive industry and the after sales market

In this chapter the automotive industry including the corresponding after sales market and the importance of pricing research within this industry will be described.

2.1 The automotive industry – facts and figures

The automotive industry is one of the leading industries worldwide with a turnover of nearly € 2 trillion in 2005 (only automobile manufacturing). (Wells, P., 2010, p. 2) Considered as a country this would characterise the sixth largest economy in the world. (Wells, P., 2010, p. 2; Organisation Internationale des Constructeurs d'Automobiles, 2006)

Within Europe in 2005 the biggest automotive economies are Germany with a turnover (automobile manufacturers) of €227,666 million followed by France with €111,901 million and Spain with €75,104 million. (Organisation Internationale des Constructeurs d'Automobiles, 2006)

In 2011 the entire German automotive industry (including suppliers etc.) recorded a turnover of € 351 million. (German Association of the Automotive Industry, 2012) These figures underline the importance of the automotive industry for a national economy. Peter F. Drucker, the well-known American management author, described the automotive industry as "the industry of the industries". He wanted to emphasise the macroeconomic importance of the automobile industry. (Diez, W., 2012, p. 21)

But due to the economic crisis the automotive industry is also faced with decreasing sales and less operating profits. The commercial vehicle segment is particularly struggling with a decrease of 60 per cent in production units between 2008 and 2009. (International Labour Office, 2010, Organisation Internationale des Constructeurs d'Automobiles, 2010)

Commercial Vehicle Production

Country	2013*	2012	2011	2010	2009	2008
World	21,944,576	21,025,505	20,147,802	19,362,284	14,019,270	17,794,376
Germany	257,932	260,813	439,185	353,576	245,334	513,700
France	244,000	284,951	311,898	305,250	228,196	423,043
Spain	414,068	439,499	534,261	474,387	357,390	598,595

* Forecast, based on figures of the first 6 months

Table 1: World commercial vehicle production 2008-2013

(Own illustration)

Another effect for this high competitive industry is the drift towards an increase in the product range of the manufacturers. It is a trend of diversification with the main goal to generate uniqueness (so called unique selling proposition) in an established industry sector. For instance in Germany the number of models offered quadrupled between 1980 and 2009. (International Labour Office, 2010)

This trend of diversification is a consequence of the customers´ ambition to individualisation. (Neubauer, W., Rudow, B., 2012, p. 4) In a long-term perspective the manufacturers may be faced with the need for a highly diversified product portfolio. This would mean that for the future only providers with a wide and differentiated product range may be competitive within the markets. (Neubauer, W., Rudow, B., 2012, p. 4)

But besides the design of the primary product, differentiation can also be realised by added services. (Herrmann, C., 2010, p. 349, Bullinger, H. J., van Husen, C., 2006, p. 18)

2.2 The after sales market of the automotive industry

The importance of product related services as one of the main factors to differentiate within a competitive market environment is extremely increasing. (Pepels, W., 2007, p. 13) These services (also called after sales services) can be defined as the number of services which are offered (by a manufacturer) after the purchase of a product. (Pflaum, D., 2007, p. 191 in: Pepels, W., 2007) The business division after sales covers either maintenance and repair or the sales of spare parts and accessories. (Meierbeck, R., Grossmann, S. in: Goepfert, I., Brown, D., Schulz, M., 2012, p. 292)

The after sales service is a very important instrument to secure profits and to increase customer loyalty. (Herrmann, C., 2010, p. 349, Pflaum, D., 2007, in: Pepels, W., 2007, p. 191) Manufacturers in the automobile industry often generate little or no profit with their primary product (the car itself) and the after sales business is the main driver for the corporate profit. (Baader, A., Montanus, S., Barkawi, R., 2006, p. 3) Market analysts assume that the profit margin in the after sales business is ten times higher than for the classical (primary) product business. (Baader, A., Montanus, S., Barkawi, R., 2006, p. 3)

Baader, Montanus and Barkawi (2006) describe the aftermarket as a growth market with a high market volume. For instance in the United States the after sales business (with product-supporting services and spare parts) constitutes nearly 8 per cent of the gross domestic product. The worldwide after sales market volume could be quantified with US$ 1.5 trillion and an annual growth rate of around 10 per cent between 2003 and 2005. (Baader, A., Montanus, S., Barkawi, R., 2006, pp. 3, 4)

In the automotive industry, companies usually generate the major part of their profits with after sales services. (Loeffler, C., Schleifer, L., 2010, p. 191) For instance in Germany (2007) the after sales business generates more than 50% of the profits with less than one quarter of the revenues. (Arthur D Little, 2008, p. 1)

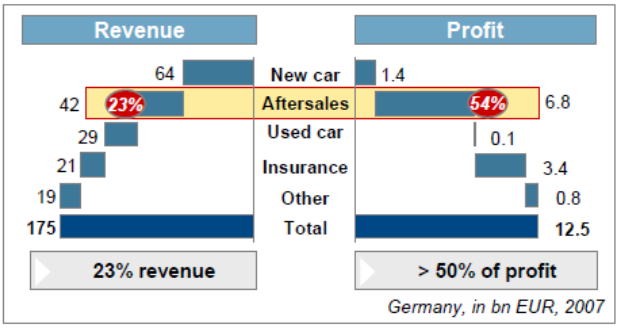


Figure 2: Profitability of the automotive after sales business

(Arthur D Little, 2008, p. 2)

The worldwide acting consulting agency Deloitte (2007) confirmed these findings, in respect of the after sales business in the automobile industry. Deloitte found out that with only 10 per cent of the revenue between 50 and 60 per cent of the companies´ profits are generated by the after sales

division, followed by financial services. But the revenue share seems to increase.

Barkawi Management Consultants (2013) compared the after sales (service) revenue of diverse industries. With 35% the service revenue in the automotive industry is significantly higher than in other sectors like the machinery or high-tech / telecommunications industry. (Barkawi Management Consultants, 2013) This underlines the economic importance of the after sales division within the automobile industry. Please see the following figure.

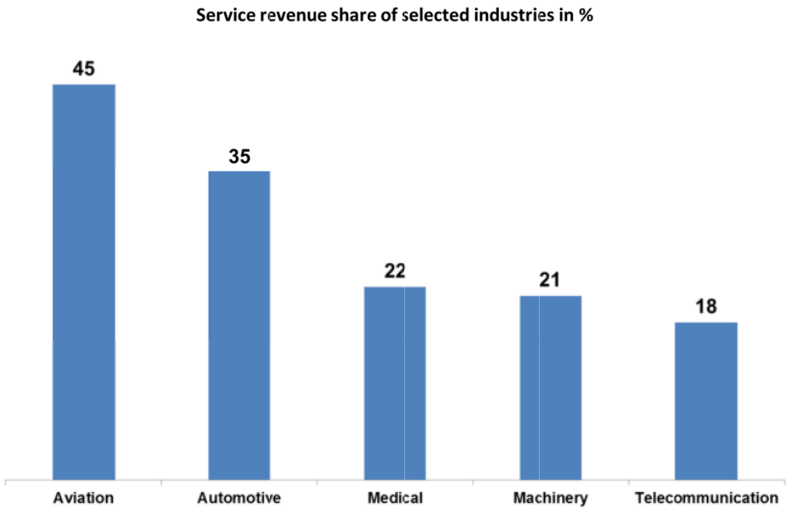


Figure 3: Service revenue share of selected industries

(Own illustration, according to: Barkawi Management Consultants, 2013)

Between 2001 and 2007 the global automotive after sales market value increased by nearly 30 per cent, from € 286 billion to € 412 billion. (Arthur D Little, 2008, p. 2) The well-known business consultancy Arthur D Little (2008) assumes an additional boost of approximately 40 per cent up to € 718 billion by 2015.

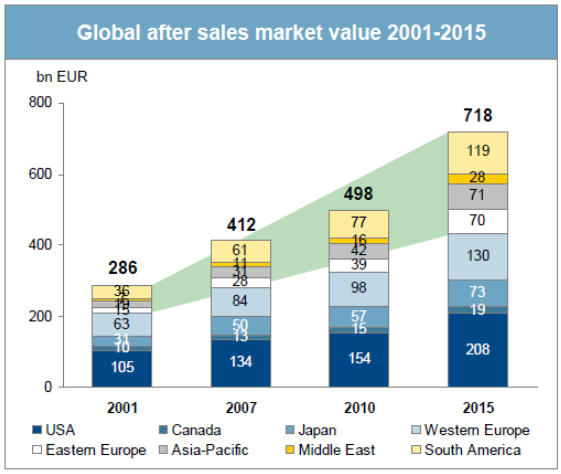


Figure 4: Global after sales market value 2001-2015

(Arthur D Little, 2008, p. 2)

A company's calculation in respect of profitability is often not solely oriented on the profits of the primary product but on the earnings of product related services. Thus the pricing of these services is a very important factor. (Pepels, W., 2007, p. 156)

2.3 Pricing within the automotive industry

In this paragraph the importance of pricing decisions and the existing pricing methods within the automotive industry will be discussed.

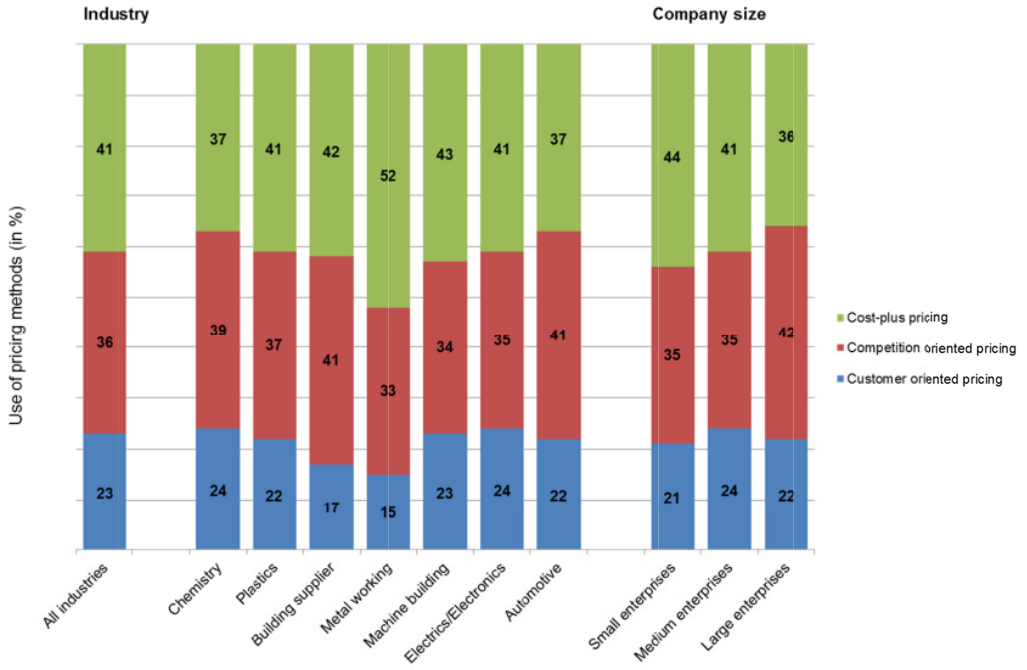


Figure 5: Pricing methods in commercial practise

(Own illustration, according to: Schuppar, B., 2006, p. 112)

The previous figure shows the application of the different existing pricing methods like cost based pricing or competitive based pricing in commercial practise. Schuppar (2006) analysed enterprises within the Business-to-Business area like the chemical, the electronic or the automotive industry in respect of price management issues. In total 346 respondents gave their statements i.e. regarding the adoption of pricing methods.

Schuppar (2006) found out that 41% per cent of the participating companies price their product based on a cost plus method but nearly 60% of the companies apply a customer oriented (23%) or a competition oriented (36%) pricing scheme. Especially bigger companies do not use the “old fashioned” cost plus method.

In the automotive industry, 63% per cent of the enterprises go for customer or competition oriented pricing. In respect of these market oriented pricing methods detailed information regarding the maximum customer willingness to pay is necessary.

2.4 Conclusions

We found out that the automotive industry is one of the leading industries in the world. Within the last few years a trend towards a diversification in this industry could be recognised with a focus on the automotive after sales market. The after sales division usually generates the main part of the automobile manufactures´ profits with high contribution margins.

But to secure these profits it is essential to set the right (profit optimised) price of the offered products or services. Today, the majority of companies focus on a market or customer oriented pricing strategy, in order to be competitive and to meet the relevant market price level. This requires a broad knowledge of the potential customers about their willingness to pay.

Price is consistently a major part of the decision making process and thus analysis of it has the widest applicability. The next chapter focuses on the role of pricing within the marketing mix. It will be discussed why pricing is an important factor to generate revenues, besides the brand, technology or quality of a product.

3 The role of pricing in the Marketing Mix

After the introduction into pricing and its importance within the first chapters the theoretical framework of pricing should be discussed in the following. The role of pricing within the Marketing Mix will be described with a focus on pricing research.

Pricing has turned from cost oriented approaches to value based or customer oriented approaches. (Breidert, C., 2006, p. 9) In value based approaches a marketer estimates the perceived values of a product and sets a price in view of these valuations. This is an important development because in order to estimate consumers' valuations for different product offerings a marketer needs reliable instruments for estimation.

3.1 Introduction

Within the marketing mix, price is the one element that generates revenues; all other elements like product, promotion and place generate cost. (Simon, H., Fassnacht, M., 2009, p. 8, Rao, V., 2009, p. 9, Kotler, P., Keller, K., 2006, p. 431) The easiest element to adjust is price because product features, distribution channels or promotion take more time. (Kotler, P., Keller, K., 2006, p. 431)

In conjunction with improved margins price improvements can act like “Quick Wins” because of the immediate results on the profit. (Wuebker, G., 2004, p. 12) One example: A petrol filling station changes its prices and the local competition shows no reaction. This situation may cause a shift of demand or market shares. (Simon, H., Fassnacht, M., 2009, p. 7)

Usually price alignments do not require upfront investment. Other marketing instruments like promotion, sales force or product adjustments require expenditures. (Simon, H., Fassnacht, M., 2009, p. 8, Kuss, A., Kleinaltenkamp, M., 2009, p. 268) Because of no investment optimal (profit-optimised) prices can be set also within a limited financial scope. For the other instruments (promotion, sales force etc.) an optimal price level cannot be reached in any case due to the required investments (with cash flows at a later date). (Simon, H., Fassnacht, M., 2009, p. 8)

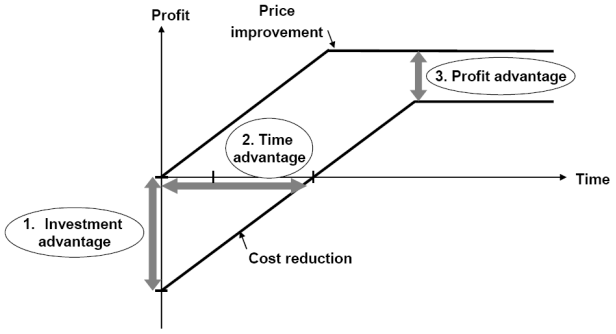


Figure 6: Advantages of value driver price

(Herr, S., Oswald-Chen, F., Ying Yang, 2007, p. 120)

Within figure 6 the investment advantage indicates that in the case of price improvements upfront less investment is required compared to cost reductions. The time advantage means that the positive effect on the profit occurs faster. And finally the profit advantage denotes a particularly high available price improvement. (Simon,H., Fassnacht, M., 2009, p. 8)

Setting market prices for a product or service is one of the most challenging issues in marketing. (Nagle, T., Hogan, J., 2006, p. 124) But the success of a company depends not exclusively on its own pricing decisions but likewise

on the customer's and competitor's reaction. (Nagle, T., Hogan, J., 2006, p. 215, Kotler, P., Keller, K., 2006, p. 443)

In parallel to the price positioning it is essential to communicate and to argue the (additional) value of a product or service. (Nagle, T., Hogan, J., 2007, p.40) To underline this Nagle and Hogan (2007) presented an example in respect of the information technology business.

In the 1990's Intel the well-known manufacturer of microprocessors presented the Pentium-Chip. Its unique selling proposition (USP) was an integrated co-processor. This allows Intel to pass on additional microchips on the main board and to save production cost compared to their competitors like Advanced Micro Devices (AMD). Within a certain period of time Intel could charge a price premium with regard to this USP until AMD presented a similar technology with the same price advantage. Based on this experience Intel decided to setup a new communication strategy.

Because of market research results that showed consumers preferred personal computers with an Intel chip inside Intel then implemented the "intel-inside" campaign with a focus on its already existing strong brand name. Today Intel is able to achieve a price premium for its microprocessors. (Example from: Nagle, T., Hogan, J., 2007, p. 40-41)

Simon and Fassnacht (2009) discuss the impact of the identified value drivers on profit by a calculation example. For an overview, see the next figure. The structure of this example is typical for industrial manufactured products. The price for the product is 100 Euro at a sales volume of one million units. Costs can be split up in fixed costs of 30 million Euros and variable costs per unit of 60 Euros. This leads to a turnover of 100 million Euros with a profit of 10 million Euros and a return on sales of 10 per cent.

How does an isolated improvement of each single driver (ceteris paribus) affect the profit? At constant factors like volume and costs for instance an increase in price by 10 per cent results in a new turnover of 110 million Euros. Thus the profit rises from 10 million Euros to 20 million Euros. This means an increase in profit of 100 per cent. For the other profit drivers the increase in profit is at 60, 40 and 30 per cent (please see the following figure). Then price is by far the most powerful profit driver. (Simon, H., Fassnacht, M., 2009, p. 2, Baumgarten, J., Wuebker, G., 2008, p. 22, Wuebker, G., 2004, p. 15)

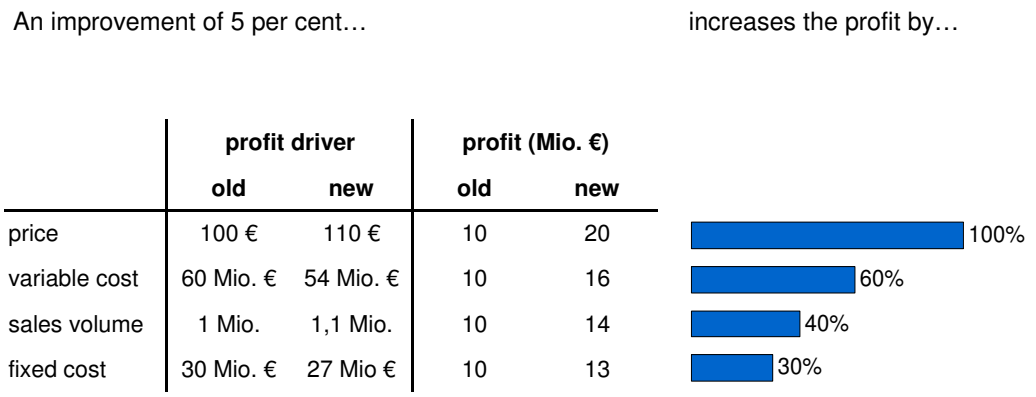


Figure 7: Impact of improved drivers on profit

(According to: Simon, H., Fassnacht, M., 2009, p. 3)

Equally interesting is a reflection concerning a decrease of 5 per cent with regard to the identified profit drivers. Within this calculation example the effect is inverse. Figure 8 illustrates the impact on the profit in respect of decreased profit drivers. The profit is equally powerfully affected by an increase or a decrease in price (i.e. the arithmetic is symmetrical). (Simon, H., Fassnacht, M., 2009, p. 2, Komender, P., 2007, p. 132)

A decrease of 5 per cent…	profit driver		profit (Mio. €)		reduces the profit by…
	old	**new**	**old**	**new**	
price	100 €	95 €	10	5	-50%
variable cost	60 Mio. €	63 €	10	7	-30%
sales volume	1 Mio.	0,95 €	10	8	-20%
fixed cost	30 Mio. €	31,5 €	10	8,5	-15%

Figure 8: Impact of decreased drivers on profit

(According to: Simon, H., Fassnacht, M., 2009, p. 4)

Certainly the applied ceteris paribus assumption does not meet commercial reality because the sales volume would normally decrease in respect of price increases. But this is imperative also for the quantity of sales because within a (competitive) robust market sales will not rise by 10 per cent without price reductions. Structurally the described correlations are valid even for variations in price or sales by 1, 2 or 3 per cent which should be realistic commercial practise without neglecting the ceteris paribus supposition. (Simon, H., Fassnacht, M., 2009, p. 4)

However the knowledge of the willingness to pay (or reservation price) is crucial for a company's profit. (Backhaus, K., et. al., 2005, p. 543)

Reservation price is defined as the maximum amount of money a customer is willing to pay for a product or service. (Frank, R., Bernanke, B., 2004, p. 62) Varian (2003) defines the reservation price as the highest price that a buyer will accept and still purchase the goods. Errors in determining the willingness to pay may lead to a loss of potential profit or market share. (Meffert, H., Burmann, C., Kirchgeorg, M., 2008, p. 482, Olbrich, R., 2006, p. 138, Backhaus, K., et. al., 2005, p. 543, Breidert, C., 2005, p. 11)

The main goal of pricing strategies is maximizing sellers' profits by capturing consumers' product valuations and accounting for competition. (Spann, M., et. al., 2009, p. 44, Kotler, P., et. al., 2008, p. 660) Other pricing objectives are to achieve a maximum return on investment and highest possible margins, to optimise market shares and to meet or prevent competition. (Peter, J., Donelly, J., 2003, p. 176) In commercial practise, companies usually aim for a long-term profit optimisation. (Simon, H., Fassnacht, M., 2009, p. 309) In this context long-term profit optimisation is defined by the net present value. "The net present value of a project is the sum of the present value of all its cash flows, both inflows and outflows, discounted at a rate consistent with the project´s risk." (Smart, S., Megginson, W., Lucey, B., 2008, p. 261) In other words the net present value or present discounted value can be described as the amount of money which is required at the current interest level to replicate the cash flow from an investment project. (Case, K., Fair, R., Oster, S., 2009, p. 269, Mankiw, N., G., Taylor, M., 2008, p, 662)

$$NPV = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \cdots \frac{CF_N}{(1+r)^N}$$

$$= \sum_{t=0}^{N} \frac{CF_t}{(1+r)^t}$$

Figure 9: Equation Net Present Value (NPV)

(Brigham, E., Houston, J., 2012, p. 371)

For this long-term view the product's life cycle should be taken into consideration concerning the development of pricing strategies and price settings. The product life cycle is defined as a timeline of sales volumes. (Simon, H., Fassnacht, M., 2009, p. 311) In general the life cycle of products can be characterised by five phases: introduction, development, maturity, market saturation and decrease. (Meffert, H., Burmann, C., Kirchgeorg, M., 2008, p. 822)

Depending on these changing phases within the product life cycle it could be affordable to use different pricing strategies and market prices. The current market price does already affect future sales and the effects of future prices. (Simon, H., Fassnacht, M., 2009, p. 310) Figure 10 illustrates the system and its interfaces regarding a long-term profit-optimisation based on the explanation of Simon and Fassnacht (2009).

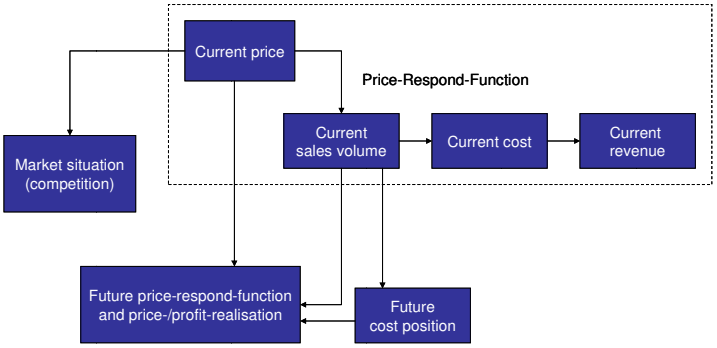


Figure 10: System of long-term profit-optimisation

(According to: Simon, H., Fassnacht, M., 2009, p. 327)

Within literature, many articles regarding research in pricing theory (and practice) can be found and over the years many different methodological approaches have been developed. (Voelckner, F., 2006, p. 4, Backhaus, K., et. al. 2005, p. 543, Lyon, D. W., 2002, p. 10) But in practise many pricing decisions today are still handled in an intuitive way, even in large organisations and enterprises. (Simon, H., Fassnacht, M., 2009, p. 10, Carroll Mohn, N., 1995, p. 11)

Relatively few companies use pricing research systematically, and often pricing or sales volumes are estimated by gut feeling. (Simon, H., Fassnacht, M., 2009, p. 80, Rullkötter, L., 2008, pp. 96, 97, Breidert, C., 2006, p. 37, Schuppar, B., 2006, p. 2, Carroll Mohn, N., 1995, p. 11)

For example within an empirical study Rullkoetter (2008) analysed more than 70 companies of the industrial goods business in Germany with an annual turnover over 100 million Euros. Based on the findings of the study 76% of the respondents stated that the dominance of intuition is one of the most frequently problems within operational pricing. Please see also the following figure.

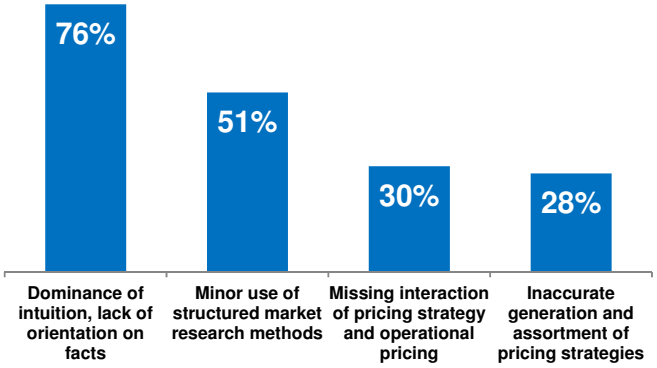


Figure 11: Overview of existing problem areas in price management

(Own illustration, according to: Rullkoetter, L., 2008, p. 92)

Simon, Fassnacht (2009) and Meffert, Burmann, Kirchgeorg (2008) analysed different existing research methods in respect of their ability to determine price-response-functions. For an overview please see the following figure.

Method / Criteria	Surveys			Observations	
	Expert judgements	Direct surveys	Indirect surveys	Experiments	Market data
Validity	medium	low/ medium	high	internal validity: high external validity: questionable	high
Reliability	medium/ high	unsure	high	medium/ high	low
Cost	very low	low/ medium	medium/ high	high	depending on availability and access
Methodological complexity	low/ medium	low/ medium	high	high	medium
Applicability for new products	yes	for familiar products good for innovations questionable	questionable regarding innovations	yes	no
Applicability for established products	yes	yes	yes	yes	yes
Total evaluation	applicable	limited applicability	highly applicable	applicable	limited applicability

Figure 12: Applicability of research methods for the determination of price-response-functions

(According to: Simon, H., Fassnacht, M., 2009, p. 142 and Meffert, H., Burmann, C., Kirchgeorg, M., 2008, p. 543)

Direct questioning techniques like the Price Sensitivity Meter, which traces back to the elaboration of Gabor/Granger (1964), Monroe (1971) and the Dutch psychologist Peter van Westendorp (1976), can be very cost effective and time-saving. (Diller, H., 2008, pp. 187, 188) The main goal of this approach is to define a range of acceptable prices and of course an optimal price (regarding the customers' willingness to pay). (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 98) "This technique uses four questions about a product or service and requires the respondent to rate each price on a scale from too cheap to too expensive." (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 98, Hague, N., 2004)

As a result the answers of the respondents will be displayed in a curve chart in order to meter the different price points. Please see the following figure.

A more detailed discussion of the van Westendorp method will follow in this thesis.

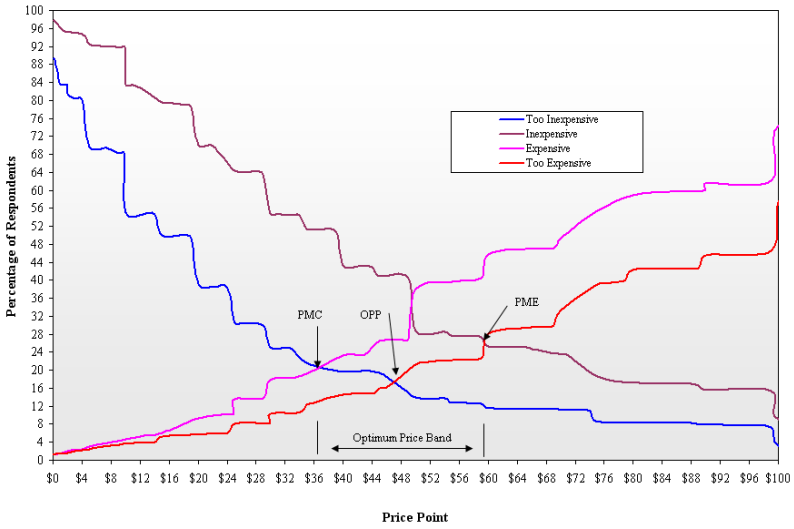


Figure 13: Van Westendorp method – Graphical aggregation of results

(According to: Reinecke, S., Muehlmeier, S., Fischer, P. M., 2009, p. 98, Hague, N., 2004)

The van Westendorp method can be used to assess how consumers' perceptions of value are affected by the interaction of price and quality. (Diller, H., 2008, p. 188) This research method also provides clues on how to alter consumers' perceptions of value. (Lewis, R., Shoemaker, S. 1997)

Due to the research methodology, the validity of the results is questionable because the respondents could be focused too much on the price and not on all relevant features of a product or service. (Simon, H., Fassnacht, M., 2009, p. 115, Diller, H., 2008, p. 188) Therefore from a conceptual standpoint price can be over-represented in the customers´ perception (Simon, H. Fassnacht, M., 2009, p. 115, Backhaus, K., Sichtmann, C., Voeth, M., Wilken, R., 2005, p. 440). A more detailed review will be presented later in this thesis.

Retailers often face the challenge of how to set the market price for a new product or brand which appears to offer some advantages over existing offerings on the market. (Kotler, P., Keller, K., 2006, p. 431) Thinking of the automotive industry, the positioning of a newly developed car concept requires a collection of market information in order to set the profit-optimised price.

Concerning the market introduction of the completely new Mercedes-Benz A-Class in 1997, Mercedes-Benz undertook a comprehensive market research project to gather the customers´ feedback. (Sebastian, K.-H., 2002, Simon, H., 2001) The new entry pricing was determined by the use of the research method Conjoint Measurement. Conjoint Measurement is a decomposed market research technology that estimates the structure of a consumer´s preference out of a set of alternatives. (Green, P., Srinivasan, V., 1990, p. 4) These alternatives are usually prespecified regarding the levels of different attributes (i.e. the price of a product or service). (Green, P., Srinivasan, V., 1990, p. 4) The market research technique Conjoint Measurement will be described later in detail.

Using the information of the market study Mercedes-Benz was able to set the right, as well as the profit optimised market price. This results in production working at capacity and additional profits of 150 million Euros per year. (Sebastian, K.-H., 2002, Simon, H., 2001, Daimler-Benz AG, Annual Report 1997, p. 19)

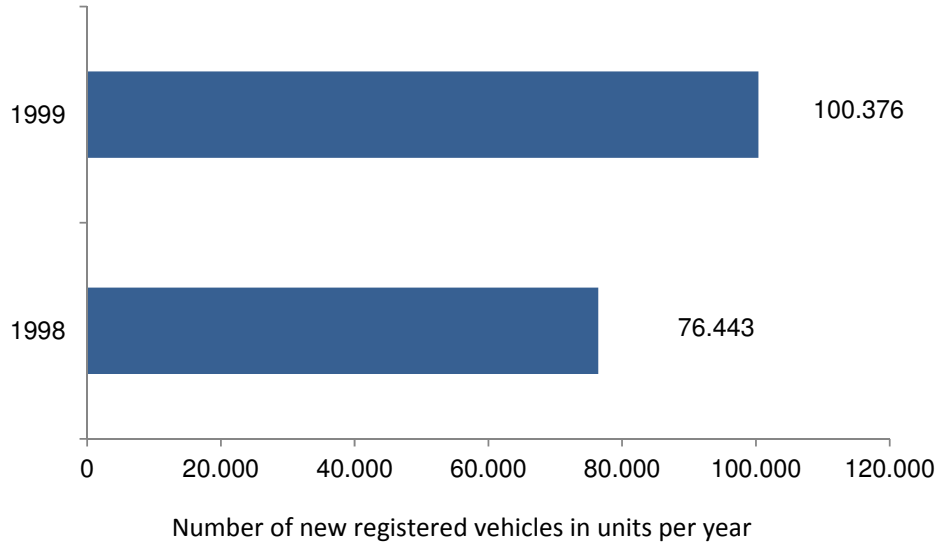


Figure 14: Registration of new vehicles per year Mercedes-Benz A-Class

(Own illustration based on official data from German Federal Motor Transport Authority 1998, 1999)

Figure 14 shows the annual registration figures concerning new vehicles of the Mercedes-Benz A-Class in Germany. This new vehicle concept has been launched worldwide in the 4th quarter of 1997. For example within the German market in 1998 the Mercedes-Benz A-Class started with more than 76.000 sold units. After this market launch the sales figures rose by 31% and reached over 100.000 new registered vehicles in 1999. (Source: Official figures from German Federal Motor Transport Authority)

“Buy two and get one free” or “The cheapest price in town”; advertisements like these illustrate that many companies focus on price regarding their marketing strategy e.g. within consumer marketing. (Voelckner, F., 2005, p. 34) The competition in the markets is increasing. (Wuebker, G., Schmidt-Gallas, D., 2006, p. 18) Therefore a market oriented price positioning of products reaches ever increasing importance. (Goodin, C., 2008, p. 22)

Because of a comparable performance of products or services in most cases, the competition for market shares is led by the price e.g. by discounts. (Nagle, T., Hogan, J., 2006, p. 124)

One example is the rise of the European low-cost airlines at the beginning of the 21st century after the liberalisation of the European domestic aviation market. Airlines like Ryanair, Easy Jet or GO entered the market with less in-flight services and with new booking procedures by dramatically reduced prices in comparison to the established airlines like British Airways or German Lufthansa. Many customers preferred reduced prices to sophisticated services and the low-cost carriers rapidly gained market shares. (Backhaus, K., Schneider, H., 2007, p. 112, 113, Breidert, C., 2006, p. 1)

As sales potential are headed by the price, the profit of a company may mainly depend on the positioning of the price. (Simon, H., Fassnacht, M., 2009, p. 3) Changes in prices have much more influence on the corporate profit than an increase in sales or cost savings. (Simon, H., 2004, p. 4)

“Empirical studies show that even small price variations can have a sustainable impact on profit”. (Marn et. al., 2004) (Backhaus, K., et. al., 2005, p. 543) For instance an increase in price of one per cent can have a quintuple higher implication on the profit than a reduction in fixed costs of one per cent. (Homburg, C., 2004, p. 1)

To underline this, in 1992 Marn and Rosiello analysed the economics of more than 2,400 companies. This study illustrated that an improvement of price even of one per cent created an improvement in operating profit of 11.1 per cent. By contrast an improvement of one per cent in variable cost, volume and fixed cost produced profit improvements of only 7.8 per cent to 2.3 per cent. (Kotler, P., Keller, K., 2006, p. 434)

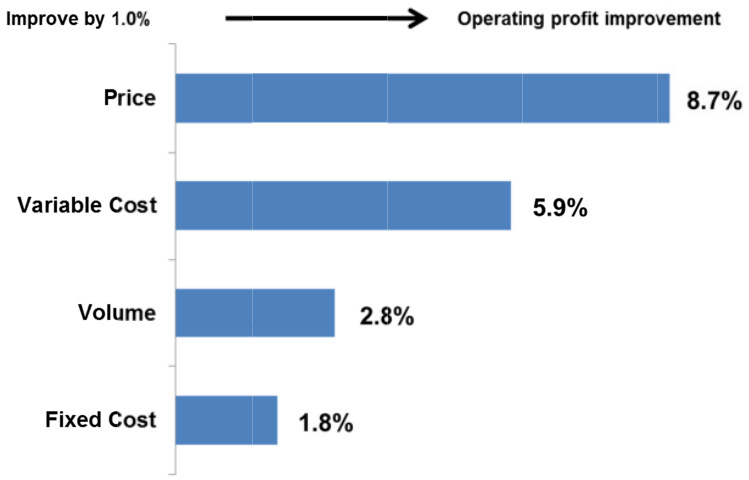


Figure 15: Comparison of profit levers

(Own illustration: According to Baker, W., Marn, M., Zawada, C., 2010, p. 5)

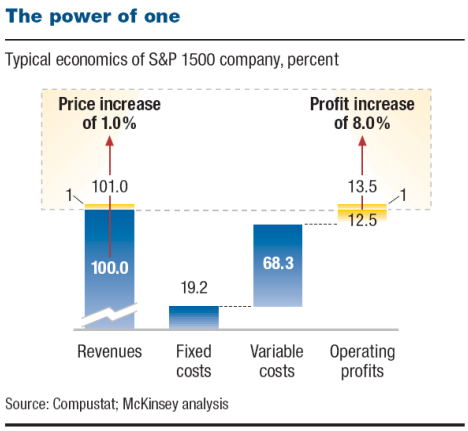
Efficient pricing processes may lead to an increase of one to eight per cent (an average of 2 per cent) regarding the return on sales. (Simon, H., 2004, p. 1090) The following figure presents an overview of practical examples with regard to the economic effects concerning the implementation of pricing processes in different industries. (According to Simon, H. 2004)

Industry	Classification of turnover in billion EUR	Type of process improvement	Increase of Return on Sales
Plant engineering	5 - 10	Systematic quantification of Value-to-customer	1.0%
Supplier	5 - 10	Innovative pricing: Value-pricing instead of cost-plus	1.2%
Tourism	5 - 10	Differentiated price structure	1.6%
Construction engineering	1 - 5	Segmentation of customers regarding price-elasticity	2.0%
Software solutions	0.1 – 0.5	Improvement of sales processes	8.0%
Logistics	0.1 – 0.5	New pricing structure and price monitoring	4.0%
Financials	1 - 5	Improvement of knowledge concerning pricing of customer advisers	1.6%

Figure 16: Improvement of Return on Sales – Samples from practice

(Own illustration, according to: Simon, H., 2004)

Marn, Roegner and Zawada (2003b) analysed the power of pricing in respect to a company's profit. For example considering the average income of an 1,500 S&P company, a price rise of 1 per cent (at stable volumes) would generate an 8 per cent increase in operating profit (see figure 17) – a nearly 50 per cent greater impact than that of a 1 per cent decrease in variable cost (e.g. materials or direct labour cost). (Marn, M., Roegner, E., Zawada, C., 2003b, p. 29)



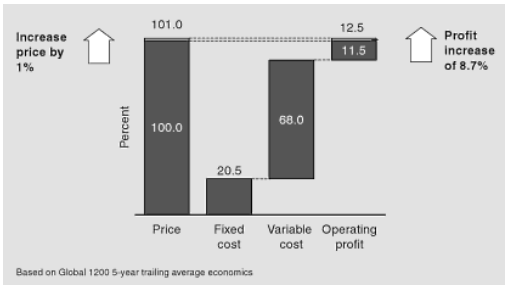


Figure 17 and Figure 18: Average economics

(Marn, M., Roegner, E., Zawada, C., 2003b, p. 29) (Baker, W., Marn, M., Zawada, C., 2010, p. 4)

Simon and Fassnacht (2009) analysed the impact of price improvement (price elasticity) on the profit of the German DAX enterprises

The analysis showed that with a 2 per cent (for example) price increase at TUI (under the assumption of stable sales volumes) profit would rise by 184%. This is due to the fact that TUI realised a relatively small pre-tax return on sales of 1.08 per cent in 2007. (Simon, H., Fassnacht, M., 2009, p. 5)

Under the same conditions the profit of Metro would rise by 81% and for Deutsche Post and Deutsche Telekom by more than 50% (see figure 12). On average for all DAX enterprises the profit would increase by 23% at a price improvement of 2%.

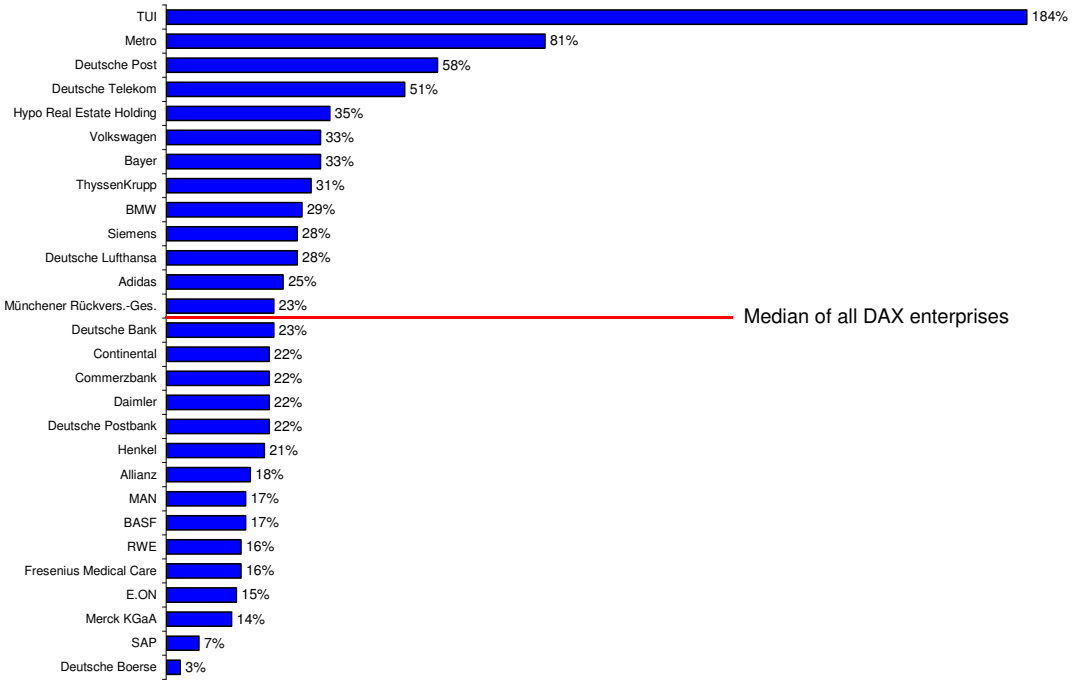


Figure 19: Profit realisation at a 2 per cent price increase

(According to: Simon, H., Fassnacht, M., 2009, p. 5)

“When price acts as a dominant indicator of quality, the pricing aspect of the marketing mix can be used to position the product and service offering. On the other hand, when price acts as a relative indicator of quality, it can be used to alter the consumer's perception of value.” (Shoemaker, S., 1997) This describes the versatile power of pricing. Price does not only drive revenues, it can also influence a brands´ value. (Keller, K., Lehmann, D., 2006, p. 746)

Usually, at higher prices the consumers perceive a higher value regarding a product or even a brand. (Kotler, P., Keller, K., 2006, p. 439) This allows vendors within the premium segment to set premium prices for comparable products or services like Mercedes-Benz, Loewe, or Starbucks. (Simon, H., Fassnacht, M., 2009, pp. 54, 55)

For example Caterpillar, the worldwide manufacturer of construction and mining equipment, uses perceived value to set the prices for its products. (Kotler, P., Keller, K., 2006, p. 446) The perceived value or market value is the value consumers perceive the product to be worth. (Smith, G. E., Nagle, T., 2005, p. 42) "Economists call this use value – the utility gained from a product" (Nagel, T., Hogan, J., 2006, p. 27)

"Customers perceive Mercedes-Benz to provide superior performance, and are hence prepared to pay the higher prices that the company charges." (Kotler, P., et. al., 2005, p. 10) Kotler and Keller (2006) define the customer perceived value as the difference between the prospective customer's evaluation of all the benefits and all the costs of an offer and the perceived alternatives. Customer perceived value is based on the difference between what a customer receives and what he or she gives for different possible choices.

Within a choice situation between two alternatives (1 and 2) the customer will examine the ratio of alternative 1 versus 2. (Kotler, P., Keller, K., 2006, p. 141) "He or she will prefer V1 if the ratio is larger than one, favor V2 if the ratio is smaller than one, and will be indifferent if the ratio equals one." (Kotler, P., Keller, K., 2006, p. 141) The main objective of perceived-value pricing is to deliver and argue higher value than the competitors. (Kotler, P., Keller, K., 2006, p. 446) Based on detailed argumentation, Caterpillar's sales people are able to indicate the higher value of their products compared to the competition. (Kotler, P., Keller, K., 2006, p. 446) For instance the sales

organisation outlines the unique selling propositions of the Caterpillar products like a distinguished durability and reliability.

Added with the companies´ after sales services the customers are convinced to receive a superior product package with higher long-term profits compared to the competitors´ offers. (Kotler, P., Keller, K., 2006, pp. 141, 446)

The following example illustrates Caterpillar's value argumentation to its customers.

$	90000	is the tractor´s price if it is only equivalent to the competitor´s tractor
$	7000	is the price premium for Caterpillar´s superior durability
$	6000	is the price premium for Caterpillar´s superior reliability
$	5000	is the price premium for Caterpillar´s superior service
$	2000	is the price premium for Caterpillar´s longer warranty on parts
$	110000	is the normal price to cover Caterpillar´s value
- $	10000	discount
$	100000	final price

Figure 20: Perceived value pricing at an example of Caterpillar

(According to Kotler, P-, Keller, K., 2006, p. 446)

Based on this argumentation the dealer is able to argue the higher value of the Caterpillar's product than the competitor's. While receiving a $ 20,000 extra value at lower life cycle cost, the customer chooses a Caterpillar tractor. (Kotler, P. Keller, K., 2006, p. 446) "He chooses the Caterpillar tractor because he is convinced that its lifetime operating costs will be lower" (Kotler, P. Keller, K., 2006, p. 446)

In the end, customers usually estimate which offer will deliver the most perceived value and act on it i.e. by purchasing a product or service. (Kotler,

P., Keller, K., 2006, p. 141) Conceptually this perceived value can be interpreted as the consumers' gross benefit which is defined as the willingness to pay or reservation price. (Butscher, S., 2006, p. 10, Pechtl, H., 2005, p. 3)

If the actual purchase price is lower than the reservation price, customers will realise a profit. Varian (2003) defines the reservation price as the highest price that a person will accept and still purchase the goods. In this case the customer receives a product at a lower price than the maximum he is willing to pay. (Pechtl, H. 2005, p.3) Figure 21 illustrates the conceptual framework of the perceived customer value.

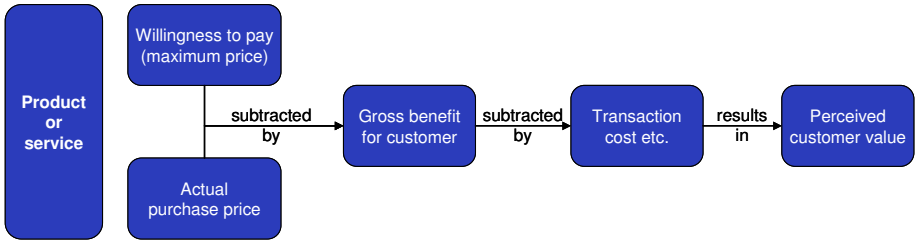


Figure 21: Conceptual framework of perceived customer value

(According to: Simon, H., Fassnacht, M., 2009, p. 598)

Price has different meanings in respect of its target groups. To the consumer price is primarily the cost for something. To the seller it represents revenue, a source of profits. (Lamb, C., W., Hair, J. F., McDaniel Jr., C., 2008, p. 474)

Pricing is one of the most important elements of the marketing mix. (Kotler, P., Armstrong, G., et.al., 2008, p. 639, Breidert, C., 2005, p. 10) Kotler, Keller (2006) remark that price represents a very important factor determining the market share and profitability of a company.

Price is the one element that produces revenues; all other parts of the marketing mix (product, promotion and place) generate cost. (Simon, H., Fassnacht, M., 2009, p. 8, Rao, V., 2009, p. 9, Kotler, P., Keller, K., 2006, p. 431)

But price is only one instrument of the marketing mix toolbox (beside product, promotion and place) for a company in order to achieve its marketing objectives. (Kotler, K., Armstrong, G., et. al., 2005, p. 668) Pricing as part of the marketing does not characterise an isolated decision field. (Diller, H., 2008, p. 33, Diller, H., Herrmann, A., 2003, p. 8) Moreover it must be considered within the context of entrepreneurial acting (i.e. coordinated with the marketing strategy, the target markets, the brand´s positioning). (Olbrich, R., Battenfeld, D., 2007, p. 3, Kotler, P., Keller, K., 2006, p. 432) All elements of the marketing mix interact with each other. (Diller, H., Herrmann, A., 2003, p. 8)

Regarding effective marketing strategies the required decisions should be coordinated within the marketing mix. (Diller, H., 2008, p. 33) For instance the conclusion to produce and promote high-quality products will mean charging higher prices to cover higher costs (Kotler, K., Armstrong, G., et. al., 2005, p. 668) Toyota furnishes an example when they decided to produce its Lexus car in order to enter the European luxury segment – this required higher prices. (Kotler, P., Armstrong, G., et. al., 2005, p. 666)

3.2 Theoretical foundations of pricing within Microeconomics

Classical pricing theory in microeconomics operates under the assumption that individuals act rationally and aim to maximise their utility. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 164, Guoqiang Tian, 2013, p. 214) Within microeconomics the demand function is a central concept for analysing pricing with the aid of a classical pricing theory. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 164) In principal this function explains that demand x depends on price p: $x = x(p)$ (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 164, Samuelson, P., Nordhaus, W., 2007, p. 81)

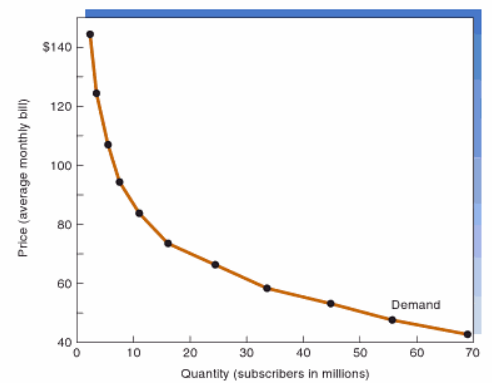


Figure 22: Demand curve

(Gwartney, J., Stroup, R., Russell S. Sobel, R., 2010, p. 55)

The demand curve displays how much customers are willing to purchase at a certain price. (Gwartney, J., Stroup, R., Russell S. Sobel, R., 2010, p. 55) “The height of the demand curve measures how much buyers in the market value each unit of the good.” (Gwartney, J., Stroup, R., Russell S. Sobel, R., 2010, p. 55)

3.2.1 Consumer surplus

“Each buyer´s maximum (price) is called his willingness to pay, and it measures how much that buyer values the goods.” (Mankiw, N. G., Taylor, P., 2011, p. 139) Of course each consumer would be happy to purchase goods at a price less than his personal willingness to pay and would decline to buy goods at a price higher than his willingness to pay. (Mankiw, N. G., Taylor, P., 2011, p. 139)

Within marketing literature the difference between a customer’s willingness to pay and the price payable is discussed as price tolerance. (Diller, H., 2007, p. 155, Titzkus, T., 2005, p. 35, Koschate, N., 2002, p. 39) Pindyck and Rubinfeld (2009) use the same definition to explain the concept of consumer surplus.

According to the microeconomic concept, price tolerance equates to consumer surplus which can be translated as „A dollar measure of the extent to which a customer benefits from participating a transaction“. (Frank, R., 2010, p. 144) For example if someone is willing to pay 20 Euros for a theatre ticket but he or she only has to pay 15 Euros for the ticket, then this difference of five Euros can be seen as the consumer surplus. (Pindyck, R., Rubinfeld, D., 2009, p. 185)

Samuelson (2010) defines consumer surplus as the difference between the overall benefit of goods and the current market value. A less complex definition of consumer surplus can be found at Mankiw (2011) and Besanko

et. al. (2010) where consumer surplus is the amount of money a consumer is willing to pay minus the amount of money a consumer actually pays for it.

Therefore consumer surplus should be considered as a transactions net benefit. (Besanko, D., Braeutigam, R., 2010, p. 173, Koschate, N., 2002, p. 39) “Consumer surplus is closely related to the demand curve of a product.” (Mankiw, N. G., Taylor, P., 2011, p. 140)

Tucker (2010) explains the concept of consumer surplus on a market demand curve by an example. At the price point (X) of $4.00 on the demand curve, no one will purchase the presented ground beef. If the price drops to the price point (A) of $3.50 consumers will purchase one million pounds of ground beef per year. At price point (B) of $3.00 an additional one million pounds of ground beef can be sold. Assuming the price point (E) of $ 2.00 for a pound of ground beef as the market equilibrium the net benefit or consumer surplus can be derived by the use of the demand curve. (Tucker, I., 2010, p. 92)

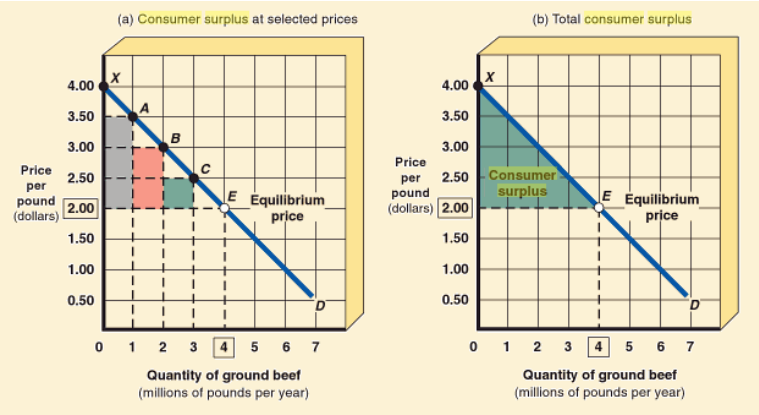


Figure 23: Market demand curve and consumer surplus

(Tucker, I., 2010, p. 92)

Samuelson and Nordhaus (2010) define the market equilibrium on the demand curve as the intersection point of the demand and supply curve. The market equilibrium represents the price point where the amount of supply equates to the amount of demand. (Samuelson, P., Nordhaus, W., 2010, p. 98) Baumol and Blinder (2011) classify the intersection point of the supply and demand curves as the price "where the consumers are willing to buy exactly what producers are willing to sell".

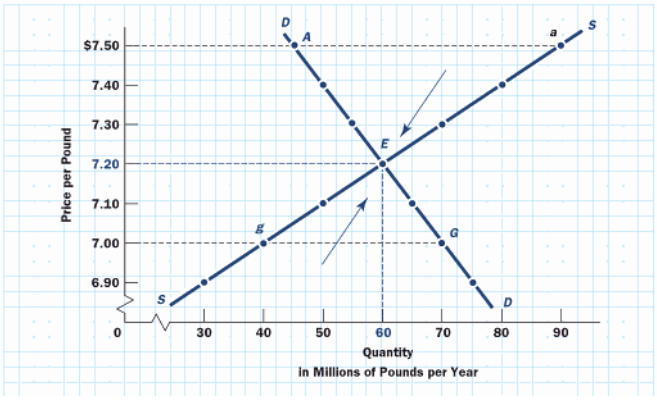


Figure 24: Supply-Demand Equilibrium

(Baumol, W., Blinder, A., 2011, p. 64)

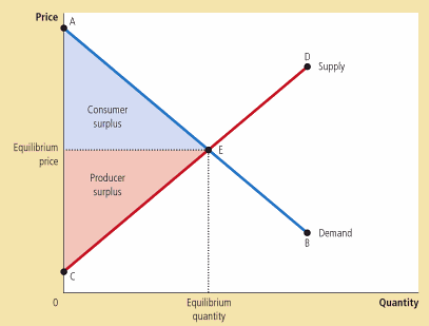


Figure 25: Consumer and producer surplus in the market equilibrium

(Mankiw, N. G., Taylor, M., 2011, p. 151)

“The total surplus (the sum of consumer and producer surplus) is then the area between the supply and demand curves up to the equilibrium quantity.” (Mankiw, N. G., Taylor, M., 2011, p. 151)

Economists also refer to the equilibrium price as a market clearing price. At this price point the market’s demand equals the supplier’s offer, thus clearing the market of a good or service. (Welch, P., Welch, G., 2010, p. 71)

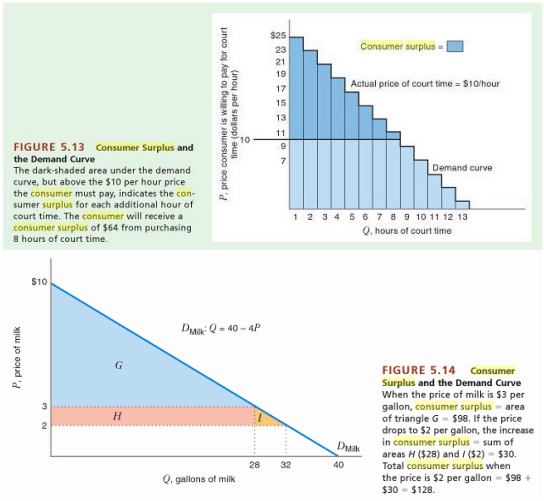


Figure 26: Consumer surplus and the demand curve

(Besanko, D., Braeutigam, R., 2010, pp. 174, 175)

Besanko and Braeutigam (2010) discuss the concept of consumer surplus by two different scenarios which are displayed in the previous figure. The area below the demand curve but above the consumers´ maximum willingness to pay is the consumer surplus. (Besanko, D., Braeutigam, R., 2010, p. 174) But this area below the demand curve only represents net benefits if the consumer experiences no income effect over the range of price change. (Besanko, D. Braeutigam, R., 2010, p. 174)

To understand the market and the consumer´s behaviour it is helpful to know the interaction effects of price changes and a corresponding demand. Therefore a brief overview about the theoretical background on elasticity of demand etc. will follow.

3.2.2 Price elasticity of demand

Price elasticity of demand measures the consumers´ responsiveness to a change in price. (McEachern, W., 2011, p. 98) Pride, Ferrell et. al. (2012) define price elasticity of demand likewise as a measure of the sensitivity of demand to a change in price.

$$Price\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price}$$

Figure 27: Formula price elasticity of demand

(McEachern, W., 2011, p. 98, Samuelson, P., Nordhaus, W., 2010, p. 66)

For marketers it is beneficial to be aware of price elasticity of demand because then setting prices for products or services is much easier. (Pride, W., Ferrell, O., et. al., 2012, p. 296) If the price elasticity of a product is high (above -1), the product has an elastic demand, which means that the quantity demanded reacts extremely to price changes. Vice versa, if the price elasticity of a product or service is low (between 0 and -1), it is inelastic and the quantity demanded responds little to price changes. (Samuelson, P., Nordhaus, W., 2010, p. 66) For example if demand falls by 2 per cent and price increases by 4 per cent, elasticity is low at -0.5. Less elasticity of demand is more beneficial for sellers to raise the price. (Pride, W., Ferrell, O., et. al., 2012, p. 296)

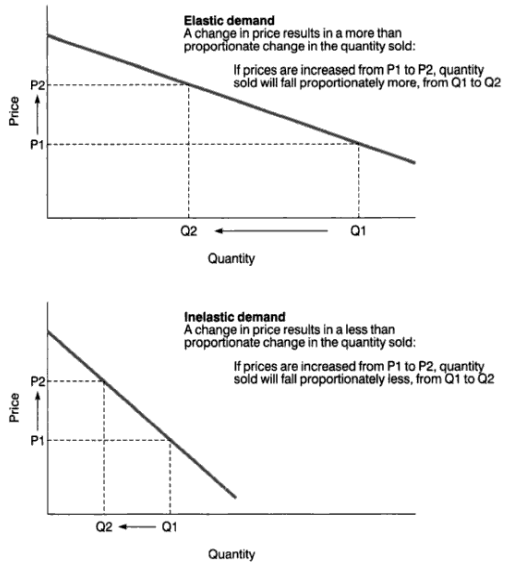


Figure 28: Price elasticity of demand

(According to: Hill, E., O´Sullivan, C., O´Sullivan, T., 2003, p. 169)

Price elasticity for consumer goods is driven by the economics specifics of demand. Price elasticities tend to be higher for luxury goods or when substitutes are available. Reverse price elasticity tends to be lower for necessities or in respect of products with few substitutes. (Samuelson, P., Nordhaus, W., 2010, p. 66)

Further to price elasticity, economists also use other elasticities to describe the purchase behaviour of customers. (Mankiw, M. G., Taylor, M., 2011, p. 103)

3.2.3 Income elasticity of demand

Regarding income effect the concept of income elasticity should also be taken into consideration. Income elasticity of demand is defined as the percentage by which the consumers´ demand will change if the buyers´ income rises by 1%, all things being equal. (Png, I., Lehman, D., 2007, p. 62)

“The income elasticity of demand measures how far the demand curve shifts horizontally when income changes.” (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 65) Mankiw and Taylor (2011) discuss income elasticity of demand to describe the behaviour of consumers in the market. In the authors´ definition income elasticity of demand measures how the quantity demanded changes as consumer income changes. (Mankiw, N. G., Taylor, M., 2011, p. 103)

$$Income\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ income}$$

Figure 29: Formula income elasticity of demand

(According to: Mankiw, N.G., Taylor, M., 2011, p. 103)

For instance necessity goods like clothing or food usually have smaller income elasticity (i.e. positive but less than -1) because buyers, regardless of their income, need to purchase these goods (and therefore when their income rises their purchasing of these goods rises less than proportionately with their income). But luxury goods like premium class vehicles (for instance a Mercedes-Benz S-Class or a Bentley Continental) tend to have high income elasticity (positive and greater than 1) because consumers with low incomes feel that they can live without these goods. (Mankiw, N. G., Taylor, M., 2011, p. 104)

3.2.4 Cross elasticity of demand

Beside income elasticity cross elasticity of demand should also be taken into consideration. Cross elasticity of demand measures how the quantity demanded of one product changes as the price of another, related, product changes. (Mankiw, N. G., Taylor, M., 2011, p. 104, Parkin, M., Powell, M., Matthews, K., 2007, p. 89)

Illustrated as a formula cross elasticity of demand can be calculated as

$$Cross\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price\ of\ substitute\ or\ complement}$$. (Parkin, M., Powell, M., Matthews, K., 2007, p. 89) Cross elasticity of demand can be either positive or negative, depending on whether the considered goods are substitutes or complements of each other. (Mankiw, N. G., Taylor, M., 2011, p. 104)

The most importance influence on price elasticity of demand is the availability of substitutes. (Tucker, I., 2010, p. 110) Goods which make other goods less valuable are called substitutes. (Baumol, W., Blinder, A., 2011, p. 118) Demand is more elastic for goods or services with close substitutes. (Tucker, I., 2010, p. 110) For example, if the price of automobiles increases, consumers can switch to buses, trains or bicycles. The more transportation alternatives available, the more quantity demanded: effecting a change in the price of automobiles. (Tucker, I., 2010, p. 110)

3.2.5 Indifference curves

In economic theory, consumer preferences can be easily illustrated by indifference curves. The indifference curve approach to display customer demand was first developed by Vilfredo Pareto, an Italian economist. In 1939 the approach was modified by Sir John Hicks and Sir John Allen. (Mukherjee, S., 2005, p. 188)

“The indifference curve shows the consumer´s preference.” (Mukherjee, S., 2005, p. 189) An indifference curve displays all combinations of market baskets which offer a consumer an equal level of satisfaction. (Sexton, R., 2012, p. 275, Mankiw, N. G., Taylor, M., 2011, p. 441, Baumol, W., Blinder, A., 2011, p. 103, Pindyck, R., Rubinfeld, D., 2009, p. 108, Begg, D., Fischer, S., Dornbusch, R., 2008, p. 79, Ison, S., Wall, S., 2007, p. 75, Mukherjee, S., 2005, p. 190)

Parkin, Powell and Matthews (2007) define an indifference curve as a line that shows combinations of goods among which a customer is indifferent. If a customer is offered two different bundles of goods he or she chooses the bundle which best suits his taste. “If the two bundles suit his tastes equally well, we say that the customer is indifferent between the two bundles.” (Mankiw, N. G., Taylor, M., 2011, p. 441)

Taylor and Weerapana (2011) discuss utility as an indicator for consumers’ preferences with regard to combinations of goods in comparison with another. If the level of utility is equal for two combinations, then the customer is indifferent between these combinations. (Taylor, J., Weerapana, A., 2011, p. 133)

The following figure shows an example concerning a consumer’s indifference curve.

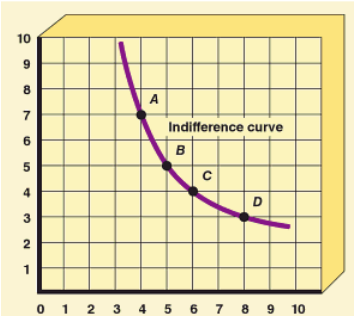


Figure 30: A consumer's indifference curve

(Tucker, I., 2010, p. 169)

Since consumers prefer more to less of a product or service, indifference curves must slope downwards. (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 79, Mukherjee, S., 2005, p. 190)

"The slope at any point on an indifference curve equals the rate at which the consumer is willing to substitute one good for the other." (Mankiw, N. G., Taylor, M., 2011, p. 441) This rate is discussed as marginal rate of substitution. (Mankiw, N. G., Taylor, M., 2011, p. 441, Tucker, I., 2010, p. 170) Deepashree (2008) discusses the marginal rate of substitution as the amount of good X a customer is willing to give up in exchange for good Y while leaving the total utility unchanged.

Indifference curves never intersect. (Varian, H., 2010, p. 38, Begg, D., Fischer, S., Dornbusch, R., 2008, p. 79, Deepashree, 2008, p. 7-7, Hirshleifer et. al., 2005, p. 80)

If they would intersect, different products would be indifferent to each other and could not lie on diverse indifference curves. Indifference curves which represent different level of preferences cannot cross. (Varian, H., 2010, p.

36) “Because of the transitivity assumption, no two indifference curves for a given customer can ever cross.” (Piros, C., Pinto, J., 2013, p. 66) The following figure shows why.

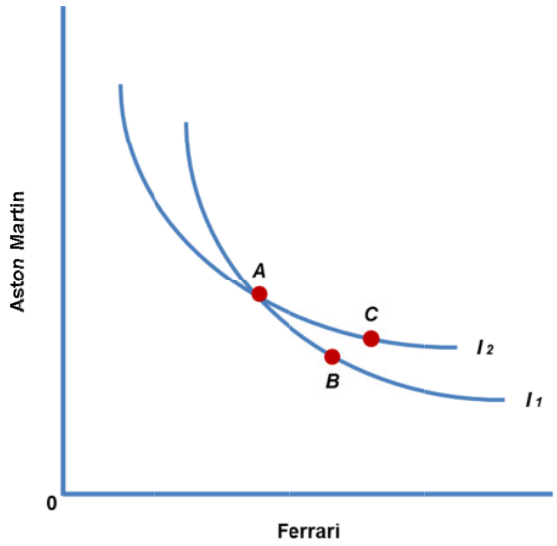


Figure 31: Intersecting indifference curves

(Own illustration)

Within the graph we can see that point *A* lies on both indifference curves I_1 and I_2. This means that the customer is indifferent between *A* and *B* and between point *A* and *C*, resulting in a difference between *B* and *C*. But as consumers usually prefer more to less they would prefer *C* to *B*. (Example according to: Arnold, R., 2013, p. 179)

In other words: Indifference curves do not intersect because customers´ preferences exhibit transitivity. Within this principle, if *A* is preferred to *B*, and *B* is preferred to *C*, then *A* is preferred to *C*. (Arnold, R., 2013, p. 179) For instance if a customer prefers Mercedes-Benz to Aston Martin and he also prefers Aston Martin to Ferrari, then he must prefer Mercedes-Benz to Ferrari. If he would prefer Ferrari to Mercedes-Benz, he would be

contradicting his earlier preferences. (Example according to: Arnold, R., 2013, p. 179)

In general indifference curves are useful to discuss any kind of goods defined in economics as, normal goods (which include necessities and luxuries), inferior goods and Giffen goods.

Normal goods are any goods for which a direct relationship exists between changes in income and the relevant demand curve. (Tucker, I., 2010, p. 54) For normal goods, demand generally increases as income increases and demand falls as income falls. (Sexton, R., 2012, p. 108, Arnold, R., 2011, p. 62) For instance if the income of buyers rises, the demand curve shifts rightward for normal goods like cars, steaks or vintage wine. A decrease in income shows the reverse effect, the demand curve shifts leftward. (Tucker, I., 2010, p. 54) These goods have a positive income elasticity of demand (greater than zero). (Boyes, W., Melvin, M., 2012, p. 99)

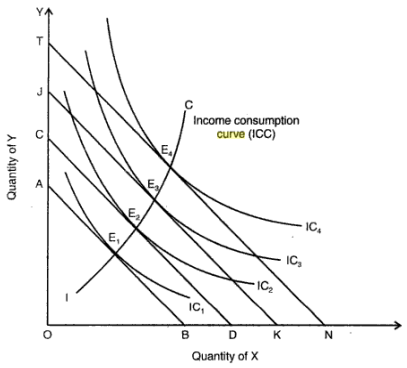


Figure 32: Income effect and income consumption curve on normal goods

(Dwivedi, D. N., 2008, p. 134)

The previous figure shows the income effect on normal goods. As income increases and prices remain constant, the curve shifts upwards remaining parallel to the original curve and vice-versa. (Dwivedi, D., N., 2008, p. 133)

Goods that we declare as necessary for our survival or general well-being are referred to as necessities, like food, housing or medical care. (Hall, R., Liebermann, M., 2012, p. 130) For example if the price of a doctor´s visit increases, people will not significantly reduce the number of times they go to the doctor. (Mankiw, N. G., 2012 p. 90)

Necessities tend to have inelastic demand. (Hall, R., Liebermann, M., 2012, p. 131) The income elasticities of necessities like gas or electricity are about 0.4 and 0.5. (Boyles, W., Melvin, M., 2012, p. 99)

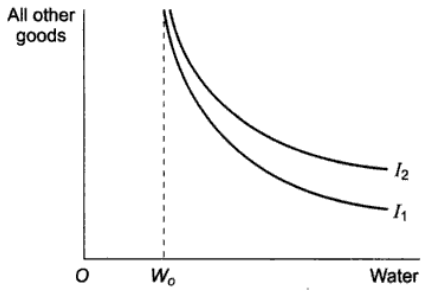


Figure 33: Indifference curve of necessities

(Deepashree, 2008, p. 7-14)

Deepashree (2008) presents an indifference curve for necessities using the example of water as an absolute necessity for survival. “As indifference curves approach W_0, they become steeper and steeper. The marginal rate of substitution for an absolute necessity approaches infinity as quantity consumed of it falls towards W_0 level.” (Deepashree, 2008, p. 7-14) Please see also the previous figure.

Inferior goods are usually cheap and low-quality. Consumers prefer not to buy these goods if they can afford to spend more money, for instance at a rising income. (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 41) Inferior goods show a negative income elasticity of demand. (Boyles, W., Melvin, M., 2012, p. 99) Tucker (2010) defines inferior goods as goods with an inverse relationship between income and its demand curve. Then demand falls while income increases, and demand increases as income falls. (Arnold, R., 2011, p. 63) "Smoking seems to be an inferior good – as income rises, people smoke less." (Boyles, W., Melvin, M., 2012, p. 99) Discount clothes or used cars can also be seen as inferior goods. Higher income allows buyers to purchase designer clothes or new cars instead of buying these inferior goods. (Tucker, I., 2010, p. 54)

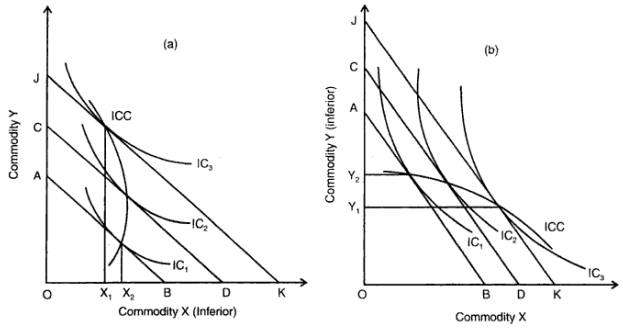


Figure 34: Income consumption curve of inferior goods

(Dwivedi, D, .N., 2008, p. 135)

"Goods that violate the law of demand are called Giffen goods." (Landsburg, S., 2011, p. 87) Giffen goods are named after the British economist Robert Giffen. (King, S., Gans, J., Stonecash, R., Mankiw, N. G., 2011, p. 510, Schotter, A., 2008, p. 82) These are goods where the quantity demanded increases if the price increase also. (Heijman, W., von Mouche, P., 2012, p.

1, Landsburg, S., 2011, p. 87, Hirshleifer, J., Glazer, A., Hirshleifer, D., 2005, p. 217) This would lead to an upward-sloping demand curve. (King, S., Gans, J., Stonecash, R., Mankiw, N. G., 2011, p. 510, Schotter, A., 2008, p. 82)

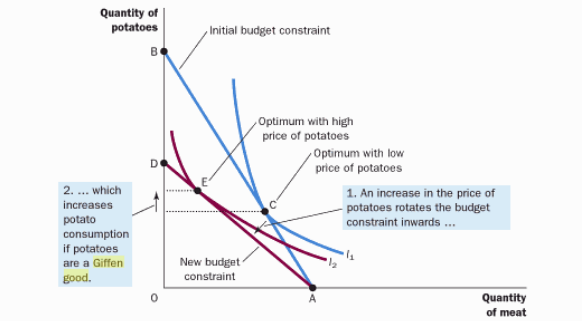


Figure 35: Demand curve of a Giffen good

(King, S., Gans, J., Stonecash, R., Mankiw, N. G., 2011, p. 510)

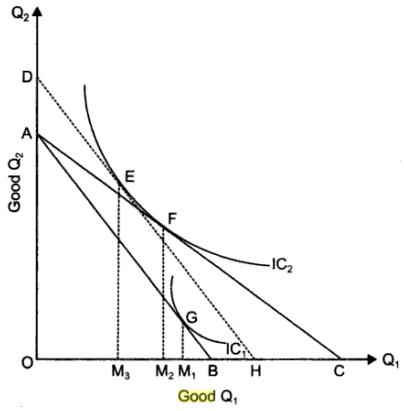


Figure 36: Indifference curve of a Giffen Good

(Mandal, R. K., 2007, p. 59)

Mandal (2007) presents an indifference curve concerning a Giffen Good. Regarding this example the consumer is at the equilibrium point G when the price line AB is tangent to the indifference curve IC_1. At this point he or she purchases OM_1 units of Q_1. With a price decrease of Q_1 the price line shifts to

AC with equilibrium at point F. At point F the consumer purchases QM_2 units of the product Q_1. As QM_2 is less than QM_1 it illustrates that the product Q_1 is a Giffen Good. (Mandal, K. R., 2007, pp. 58, 59)

Another market effect can also be taken into consideration in order to explain an upward-sloping demand curve. This is the so-called Veblen-effect which is named after the American economist and sociologist Thorstein Veblen (1857 – 1929). In his book “Theory of the leisure class”, Veblen (1899) found out that products exist with a positive price elasticity of demand in respect of exclusivity. (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 88) This means that at rising prices the customers´ demand of a product increases instead of a predicted decrease. (Musiol, G., Kuehling, C., 2009, p. 93, Diller, H., 2008, p. 110, Moser, K., 2007, p. 199,) The Veblen-effect refers to the psychological association of price with quality. With a fall in price customers imply a lower quality with the result of decreasing demand. The Veblen-effect is more likely used for high-priced products in markets where information on the true quality of these products is highly imperfect. (Griffiths, A., Wall, S., 2008, p. 70)

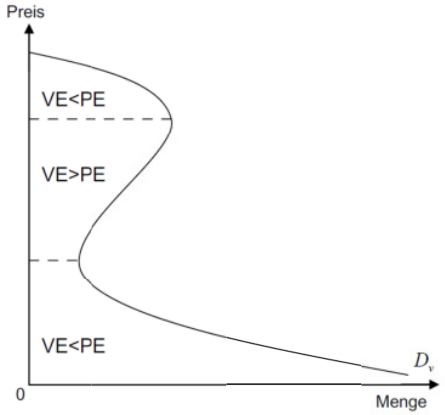


Figure 37: Graph price-demand-function of Veblen-effect

(Hellhammer, S., 2007, p. 24)

But the Veblen-effect can usually be found for luxury goods where the consumers intend to differentiate themselves while buying extraordinary or limited products at exceptionally high prices. (Simon, H., Fassnacht, M., 2009, pp. 64, 170) The Veblen-effect is probably useful for high-priced products in “prestige” markets where precise information on the quality of these products are non-transparent. (Griffiths, A., Wall, S., 2008, p. 70)

Indifference curves make it possible to describe the theoretical logic of rational consumer choice or the determination of an individuals´ demand curve. (Sloman, J., 2006, p. 116) So much for theory, however in a practical sense the concept of indifference curves is not really useful. In “reality” it is almost impossible to derive indifference curves, since it would implicate a consumer having to keep in mind a number of alternative goods or services and deciding in each case which of these alternatives would give the highest level of satisfaction. (Sloman, J., 2006, p. 144)

The theoretical concept assumes that consumers act rationally, but in practice normally this assumption is not applicable. (Sivagnanam, K., J., Srinivasan, R., 2010, p. 116, Sloman, J., Wride, A., 2009, p. 121) Simon and Fassnacht (2009) reconsider commercial reality and the consumers´ choice behaviour as really complex. In reality in the context of a price-response correlation the customers´ manner is also influenced by additional aspects like perception, emotion, recall or satisfaction. (Simon, H., Fassnacht, M., 2009, p. 145)

Varian (2010) remarks that the application of indifference curves in order to describe customers' preferences is problematic. Indifference curves only show those bundles which are considered as indifferent by the consumers. They do not present if one bundle is superior to another bundle. (Varian, H., 2010, p. 36) Sredl and Soukop (2011) underline this: "The impacts of the consumer's mutual relations, the interdependence of preferences or specific kinds of consumption are eliminated in this concept." (Sredl, K., Soukop, A., 2011, p. 144)

Based on these practical limitations concerning the basic theory of indifference curves there is the need to discuss other tools for examining actual pricing policy.

3.3 Pricing policy

In principal pricing policy deals with the setting of price including all relevant information, considerations and (marketing) activities to realise an aspired market price. (Kuss, A., Kleinaltenkamp, M., 2009, p. 267) Diller (2008) defines pricing policy as the basis of all activities (aligned with the goals of a supplier) in respect of the search, choice and implementation of price-performance ratio to present problem solving for a customer. Pricing policy supports superior business objectives like Rate of Return or profit and an amendment regarding the competitive position of retailers and consumers like an optimisation of the perceived price acceptability. (Bruhn, M., 2007, p. 166)

Today, pricing policy represents a complex management task which includes a number of strategic and operational decision parameter (Bruhn, M., 2007, p. 166). Therefore the concept price management is alternatively used (Schuppar, B., 2006, p. 11). Schuppar (2006) presents a definition on price management as a concept which consists of pricing decisions concerning pricing strategy and its appropriation in pricing systems. Simon and Fassnacht (2009) define price management as a system of regulations in respect of definition and enforcement of prices containing the following aspects:

- Information, models, decision rules, optimisation,
- organisation, responsibilities incentives,
- competencies, qualification, training, negotiation and
- informational support.

3.3.1 Decision fields of pricing policy

Within commercial practice, decisions on pricing politics are unavoidable if changes in price are necessary regarding change in cost, shift in demand, price alterations of competitors or the fixing of prices concerning a market launch of new products. (Woehe, G., 2005, p. 530)

Generally pricing policy includes six decision fields (please see the following figure). (Homburg, C., Krohmer, H., 2009, p. 187) The focus will be on pricing for new products and on price changes for existing products because these ‘fields of action’ relate intensively with pricing research and gathering market information to set the price.

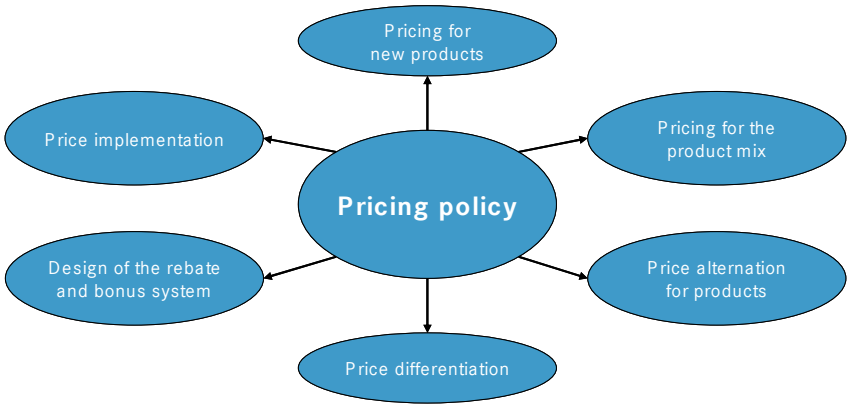


Figure 38: Decision fields of pricing policy

(Own illustration, according to: Homburg, C., Krohmer, H., 2009, p. 187)

One of the most important and hardest issues for marketers is the pricing of new products. (Meffert, H., 2008, p. 506) In this context, penetration and skimming strategies are discussed either in theory or in commercial practise. (Meffert, H., 2008, p. 506, Bruhn, M., 2007, p. 172)

3.3.1.1 Penetration pricing

Penetration pricing strategy is used to gain or to optimise market shares while companies believe that a higher sales volume will lead to lower unit costs and higher long-run profit. (Kotler, P., Keller, K., 2006, p. 438) Within the penetration pricing lowest prices for new products are set in order to enter markets and to gain market shares quickly. (Meffert, H., 2008, p. 506) Therefore a highly price sensitive market, would suggest that a low price which stimulates market growth is favourable. (Kotler, P., Keller, K., 2006, p. 438) Negative effects can occur for a long period of amortisation for the launched products and a relatively low range for price decreases (depending on the low market entry pricing). (Meffert, H., 2008, p. 507)

3.3.1.2 Limit Pricing

A “special” form of pricing represents the idea of Limit Pricing. The theoretical concept Limit Pricing which originated in the 1950´s and 1960´s by Bain, Modigliani and Sylos-Labini focuses on incumbent´s/monopolist´s behaviour to discourage economy to enter a market. (Kim, J., 2003, p. 1)

Limit Pricing is a long-term profit maximisation strategy where a company lowers its prices in order to deter market entry and to preserve higher earnings over a long-run. (ABA Section of Antitrust Law, 2005, p. 131) “The possibility of entry limits the price that the incumbent will charge, which is why the phenomenon is called limit pricing.” (Hall, R., 2008, p. 433) But the distance to an illegal pricing method like predatory pricing is short. Predatory pricing means selling products below cost with the intention of destroying competition – this is unlawful. (Kotler, P., Keller, K., 2006, p. 455)

Excursus:

The most basic form of market structure is a perfect competition. (McEachern, W., 2011, p. 174) In economics perfectly competitive markets are characterised i.e. by many buyers and sellers where these buyers and sellers are fully informed about the price or the availability of resources and products. (McEachern, W., 2011, p. 174) In (perfectly) competitive markets each participant (buyer and seller) takes price as given. (Hall, R., E., Lieberman, M., 2012, p. 55)

Hirschey (2009) characterises perfect competition as a market structure which is defined by a large number of buyers and sellers in respect of the

same (comparable) product. Each of the market participants is too small to influence the market prices. (Hirschey, M., 2009, p. 383) Within perfect competition there is free market entry and exit. There are no barriers for a market entry or exit. (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 141, Hirschey, M., 2008, p. 383)

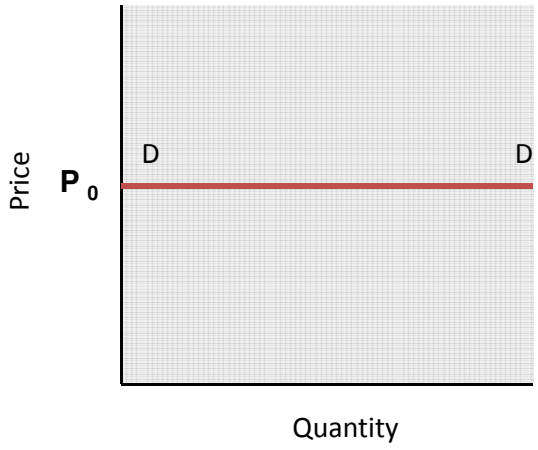


Figure 39: Horizontal demand curve

(Own illustration, according to: Begg, D., Fischer, S., Dornbusch, R., 2008, p. 141)

"Each firm in a perfectly competitive industry faces a horizontal demand curve." (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 141) Please see the previous figure. This means however much a company sells, it only gets the market price. If the firm charges a higher price than P_0 it won´t sell any products because the customers will choose equal products of other sellers. Therefore the firm´s demand curve is *DD* (Begg, D., Fischer, S., Dornbusch, R., 2008, p. 141)

Another form of a market structure is monopolies. A company is a monopoly if it is the sole seller of its product and if this product does not have closer substitutes. (Hall, R., Lieberman, M., 2012, p. 282, Mankiw, N. G., 2011, p. 300) For instance in most countries if you want to send a standard letter you

have to use the national postal service like the U.S. Postal Service or the Royal Mail in the UK with no alternative. (Hall, R., Lieberman, M., 2012, p. 282, Begg, D., Fischer, S., Dornbusch, R., 2008, p. 152)

Monopolies are characterised by barriers to market entry. “The key difference between a competitive firm and a monopoly is the monopoly´s ability to influence the price of its output.” (Mankiw, N. G., 2011, p. 303) A competitive firm is too small in relation to the market but a monopoly as the sole supplier within a market can control the price by adjusting the quantity to the market. (Mankiw, N. G., 2011, p. 303)

In contrast an oligopoly market structure is characterised by a few large firms which dominate the market. (Sexton, R., 2012, p. 413) Industries like aircraft, tobacco, steel or automobiles can be described as oligopolistic. “Oligopoly is competition among the few.” This means few firms (like three, five or seven) lead a market. (Boyes, W., Melvin, M., 2012, p. 173, Tucker, I., 2010, p. 187) Sexton (2012) and Tucker (2010) define such a market condition when few firms are so large in relation to the total market that they can affect the market price. A difficult market entry defines oligopoly markets (Tucker, I., 2010, p. 187) In comparison to perfectly competitive markets the market entry within oligopoly markets is more difficult. (Boyes, W., Melvin, M., 2012, p. 173)

Based on these conclusions Limit Pricing should be a strategy for oligopoly markets with few competitors and not for perfectly competitive markets with many participants and comparable products.

3.3.1.3 Skimming pricing

Regarding a skimming pricing strategy new products are offered at relatively high prices to the markets (at market launch). The focus of this strategy is to skim the subsisting willingness to pay of the consumers. (Homburg, C., Krohmer, H., 2009, p. 187) The idea is to reach the 'premium-price buyers' in the markets first to maximise the revenue per unit. (Lamb, C., Hair J., McDaniel, C., 2008, pp. 489, 490) Then within a products' life cycle its price will be lowered gradually. (Diller, H., 2008, p. 289) Companies often test a market at a high price and lower the price if sales are too slow. (Lamb, C., Hair J., McDaniel, C., 2008, p. 489)

The following figure illustrates the (theoretical) price effect of penetration (increasing prices) versus skimming pricing (decreasing prices) over a products' life cycle.

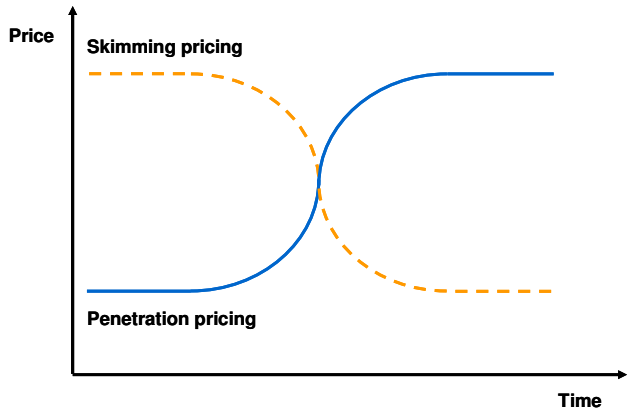


Figure 40: Penetration and skimming pricing

(Own illustration, according to: Homburg, C., Kuester, S., Krohmer, H., 2009, p. 162)

Price always depends on a game of market forces. Due to shifts in demand, competition or cost ratio oftentimes price changes become necessary. (Homburg, C., Krohmer, H., 2009, p. 189)

Price changes or so called price variations are on hand if suppliers change the price (increase or decrease) of a commodity within a planning period knowingly in order to affect a market. (Diller, H., 2008, p. 357)

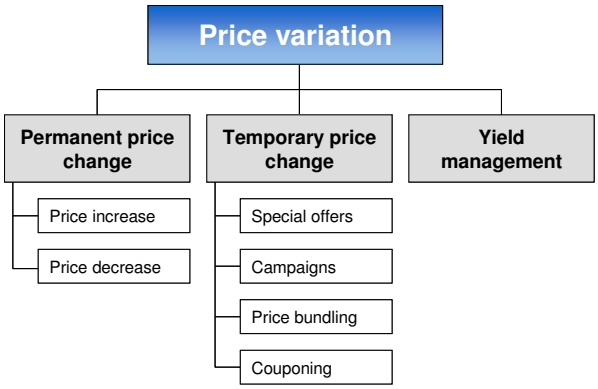


Figure 41: Aspects of price variations

(Own illustration, according to: Diller, H., 2008, p. 358)

Within figure 40 the different aspects of price variations are shown. Permanent price changes in terms of price increases or decreases (long-term effect) should be distinguished from temporary price changes in terms of price campaigns (short term effect). (Diller, H., 2008, p. 357) "Strategic price changes that are permanent include, for instance, price repositioning of products or product lines." (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 162) Examples for temporary price changes are weekly prices in retail stores or seasonal prices i.e. in the tourism industry. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 162) Temporary price changes are always a question of price attractiveness to inspire customers to buy. (Diller, H., 2008, p. 357)

Another type of price variation represents Yield Management. This concept does not only focus on sales effects but also on regulation of earnings through an optimal capacity utilisation. (Diller, H., 2008, p. 357) "Yield Management is about coordinating 5 Cs: calendar, clock, capacity, cost and customers." (Buhalis, D., Costa, C., 2006, p. 205) It is typically used to match service timing and pricing to the customers willingness to pay in relation to its timing and demand from other customers. (Buhalis, D., Costa, C., 2006, p. 205) Yield Management pricing techniques are particularly profitable for selling services. (Oz, S., 2008, p. 2) "The airline and hospitality industries use yield management systems and yield pricing, by which they offer discounted but limited early purchases, higher-priced late purchases, and the lowest rates on unsold inventory just before it expires." (Kotler, P., Keller, K., 2006, p. 454)

The main goal of price variation or optimisation is to find the price point that balances costs and customer response in the most profitable way. (Nagle, T., Hogan, J., 2006, p. 137) Therefore variations in price are ideally based on market information especially in respect of the customers' willingness to pay which will be discussed later.

3.3.2 Individual consumer purchase behaviour

In classical pricing theory, rational cost-benefit reflections are fundamental for the understanding of individual consumer purchase decisions. (Blade, R., Parkin, M., 2009, p. 10, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 173, Mankiw, N. G., Taylor, M., 2008, p. 8, Mankiw, N. G., 2008, p. 142, Brent, R.J., 2008, pp. 3, 4). Empirical surveys show, however, that the behaviour of

individuals usually deviates from this qualitative hypothesis (Case, K., Fair, R., Oster, S., 2009, p. 80, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 173, Samuelson, P., Nordhaus, W., 2005, p. 701, Kunz, V., 2004, p. 143, Stocké, V., 2002, p. 18) "This phenomenon is investigated in the field of behavioral pricing theory, in which psychological factors play an important role in customer decision-making." (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 173).

By way of contrast, behavioural science in respect of pricing can be described i.e. by the concept of willingness to pay. In this context willingness to pay is inclined by price-performance ratio i.e. the perceived fairness of price or a deal. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 174)

For instance in practice there is a difference in willingness to pay for a bottle of water offered either in a grocery store or in a first class hotel because the consumer is influenced by the expected price he or she normally has to pay within the store or the hotel. In this case the expected higher personnel cost of an exclusive hotel should be taken into consideration regarding a 'fair price'. So usually the consumer would pay a higher price in the hotel in comparison to the grocery store for the same product. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 174)

Of course this is based on the assumption that no close substitutes are available because when close substitutes are available for a product or service demand tends to be more elastic. (Hall, R., Lieberman, M., 2012, p. 129) If diverse alternatives for a product or service exist customers can

easily switch to substitutes when there is a price increase for the desired product. (Carbaugh, R., J., 2010, p. 58)

Within literature different definitions of price can be found. For example Simon and Fassnacht (2009) define price as the number of monetary unit customers have to pay for a product or service. “Price is that which is given up in an exchange to acquire a good or service. Price is typically the money exchange for the good or service.” (Lamb, C., W., Hair, J. F., McDaniel Jr., C., 2008, p. 474). Bruhn (2007) expresses price as a result concerning the balance of supply and demand. Kotler and Armstrong (2005) choose an advanced characterisation for price: “The amount of money charged for a product or service, or the sum of the values that consumers exchange for the benefits of having or using the product or service.”

Regarding a value-based pricing strategy the definition of Kotler and Armstrong should be the better option because this definition includes the customers´ point of view.

The development and implementation of a market oriented or value based pricing strategy is ideally based on multiplicity of market information (i.e. competition reaction, customer requirements, willingness to pay). (Harmon, R., Raffo, D., Faulk, S., 2003, p. 6) As described before willingness to pay is defined as the maximum amount of money a consumer is willing to pay for a given quantity of a product. (Voelckner, F., 2006, p. 137, Wertenbroch, K., Skiera, B., 2002, p. 228)

Knowledge about the customers´ willingness to pay is a key success factor for a pricing strategy or price settings. (Simon, H., 2009, p. 155, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 165, Woratschek, H., Roth, S., 2006, p. 373, Breidert, C., 2006, p. 10) The term willingness to pay will be discussed more explicitly later in this chapter.

Moreover it is essential to be aware of the customers' perception concerning prices, price changes and price differences. (Monroe, 2003, p. 128) But in commercial practise only a small number of companies develop pricing strategies based on buyer response behaviour. (Simon, H., Fassnacht, M., 2009, p. 10, Diller, H., 2008, p. 25, Cressman, G., E., 1997, p. 8) This results in high prices in the case of high demand for a product and in low prices concerning a weak demand. (Pride, W., M., Hughes, R.J., Kapoor, J., 2008, p. 385)

Studies show that just between 8% and 15% of the respondents carry out serious pricing research to support effective pricing strategies (Monroe, K, Cox, J., 2001, p.1) However a trend towards a professionalised pricing with an analytic and structured procedure is distinguishable (i.e. concerning information gathering). (Diller, H., 2008, p. 25)

3.4 Pricing Methods – Base price calculation

After defining the pricing policy it is necessary for a corporation to determine a concrete product price. (Meffert, H., 2008, p. 524) Price calculation deals with the determination of a companies' current valid bargain price regarding its product portfolio. This could be essential for the market launch of new

products or the repositioning of already established products. (Diller, H., 2008, p. 309)

There are different methods to implement this as in the past a cost oriented approach was most frequently used in commercial practise. (Homburg, C. Kuster, S., Krohmer, H., 2009, p. 184, Meffert, H., 2008, p. 524) Of course knowledge about the costs can give a first orientation and may be helpful to define the price floor. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 184, Meffert, H., 2008, p. 524) But with a simple mark-up to the variable cost either the customer demand behaviour or the competition situation in a market are not taken into account. (Meffert, H., 2008, p. 524)

In favour of a market oriented consideration it is essential to cover the willingness to pay and on-going price-demand functions. (Meffert, H., 2008, p. 524)

According to this the different pricing methods will be reviewed first followed by a description of the concept willingness to pay. In the next chapter a detailed overview about the market research approaches concerning the evaluation of willingness to pay will be presented.

3.4.1 Cost oriented pricing

Within cost oriented pricing the price of a product is based on the cost-unit accounting. (Bruhn, M., 2007, p. 174) The calculation can be implemented on the basis of full-cost accounting or direct costing. (Bruhn, M., 2007, pp. 174, 175)

“Cost-plus pricing represents cost-based pricing in its pure form.“ (Homburg, C, Kuester, S., Krohmer, H., 2009, p. 185) Then prices are calculated by means of adding a mark-up to the unit cost: price = unit costs x (1 + mark-up rate) (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 185) Especially within the trade industry cost-plus pricing on the basis of total unit cost is very popular. (Diller, H., 2008, p. 314)

Obviously within commercial practise the cost-oriented approach offers some significant advantages, for instance an easy handling which supports fast decisions because of fewer required analytical skills. (Diller, H., 2008, p. 314) As another benefit, the marginal need of information due to the fact that unit costs accounting is also needed for other purposes, like balancing can be seen. Hence no additional costs occur which make this method comparatively cheap. (Diller, H., 2008, p. 314)

But the fundamental handicap of cost-based pricing is that demand-related and competition-related aspects are not taken into consideration because clearly demand depends on unit-price and the unit-costs depend on demand: the higher demand, the lower the fixed costs per unit. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 185, Diller, H., 2008, p. 316) Nagle and Hogan (2006), present with a case study of Wang Laboratory, a very descriptive example regarding cost-based pricing and its consequences. Wang invented the world´s first word processor and received immediate success with this innovative product. Though with increasing competition the sales volume declined and unit costs increased rapidly. According to a cost-plus pricing

prices were recalculated based on a rising overhead allocation with the result of further decreasing sales. Shortly even Wang´s most loyal customer switched to cheaper alternatives.

Instead of pricing reactively to cover cost, companies amend prices proactively because pricing affects sales volume and sales volume affects costs. (Nagle, T., Hogan, J., 2006, p. 3)

3.4.2 Competition-based pricing

For a competition-based pricing approach pricing is primarily based on price and reaction of the competitors. (Berndt, R., Cansier, A., 2002, p. 159) In commercial practise monopolies are comparatively uncommon, while oligopolies and hence pricing within oligopolies are more relevant. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 186) An oligopoly is an industry which is dominated by few firms that are large enough to influence a market price. Oligopolies exist in different forms. (Case, K, Fair, R., Oster, S., 2009, p. 315) For instance 90 per cent of the US music market (produced and sold music) comes from just four studios: Universal, Sony, Warner and EMI. Competition between these firms is intense but they compete less on price. (Case, K, Fair, R., Oster, S., 2009, p. 315)

Another form of oligopoly is the airline industry with fierce price competition. For example when Southwest Airlines enters a new market, customers usually benefit from large price drops. (Case, K, Fair, R., Oster, S., 2009, p. 315)

“When competitors pursue aggressive pricing behaviour price wars very often emerge.” (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 186) For instance the cellular phone market has gone through strong competition regarding segment rivalry. (Kotler, P., Keller, K., 2006, p. 342)

Usually within competition-based scenarios a so called guiding price corresponds either to the price of the market leader or the average price of the industry sector. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 189, Woehe, G., 2005, p. 536) In oligopolistic market structures with generic products (for instance raw materials, steel, paper, chemicals) an average market price is often used as guiding price. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 189) As a consequence all companies price their products very similarly. Thus price changes often occur based on the market leaders’ reaction and less in response to demand or cost trends. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 189)

3.4.3 Target costing

Target costing is located between cost-based and demand-based pricing. (Meffert, H., 2008, p. 527) “Target costing is a disciplined process for determining and realising a total cost at which a proposed product with specified functionality must be produced to generate the desired profitability and its anticipated selling price in the future.” (Clifton, M., Bird, H., Albano, R., Townsend, W., 2004, p. 1) The objective is to align the production cost to the market conditions in order to preserve or to increase competitiveness. (Ewert, R., Wagenhofer, A., 2008, pp. 280, 281) In contrast to cost-plus pricing the price finding process at target costing focuses on the realisable

market price to define in the following a price ceiling for production. (Meffert, H., 2008, p. 527) For pricing purposes the idea of target costing represents an integrated approach of cost-based and demand-based pricing. (Meffert, H., 2008, p. 527)

3.4.4 Demand-based pricing

“Many companies now recognise the fallacy of cost-based pricing and its adverse effect on profit.“ (Nagle, T., Hogan, J., 2006, p. 5) For example with changing from cost-based to demand-based pricing the net income of Parker Hannifin Corporation increased by more than 500% from $130 million in 2002 up to $673 million in 2006 (Maxwell, S., 2008, p. 171)

Note: “Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets.” (Source: Parker Hannifin Corporation Website, 2010)

Both cost-based and competition-based pricing are not sufficient to determine a profit-optimised price because the consumers´ reaction on different prices is not reflected. (Meffert, H., 2008, p. 531) But reflecting the customers´ response is essential within pricing. So these pricing approaches should only be used complementarily. (Meffert, H., 2008, p. 531) Demand usually varies in respect of price for products which have a high price elasticity of demand. (Stone, M., McCall, J., 2004, p. 157)

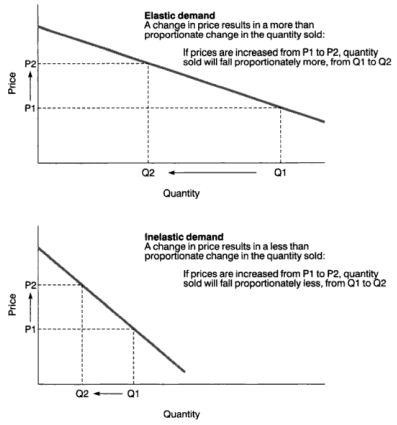


Figure 42: Price elasticity of demand

(Hill, E., O´Sullivan, C., O´Sullivan, T., 2003, p. 169)

A demand-based pricing takes account of customer needs and wants. (Blythe, J., 2008, p. 157) Demand-based pricing is the most market-oriented pricing approach because it contains information about what the customers might expect to pay for a product or service and how many choose each price level. (Blythe, J., 2008, p. 157, Brassington, F., Pettitt, S., 2006, p. 493) Usually this pricing method results in high prices at high demand and lower prices at minor demand. (Pride, W., Hughes, R., Kapoor, J., 2009, p. 385)

Demand-oriented pricing can be very powerful in achieving a beneficial market position and can lead to higher profits. (Brassington, F., Pettitt, S, 2006, p. 496) But the effectiveness of this method depends very much on companies´ ability to estimating demand accurately. (Pride, W., Hughes, R., Kapoor, J., 2009, pp. 385, 386)

The advantage of demand-based pricing is that (internal) price calculations are linked with (external) factors like market-demand (willingness-to-pay). (Forsyth, P., 2009, p. 43) The disadvantage with demand-based pricing is the issue to estimate the effect of price variations on the product demand in

an accurate way. The main difficulty is to know (to estimate) the sales volume at a certain price level. (Forsyth, P., 2009, p. 43) Regarding this a solution may be to examine historical data of similar products at different price levels to study the effects on sales of price. (Forsyth, P., 2007, p. 43)

“One of the good things about using a customer-based pricing approach is that you should be able to determine the “target price” based on the customer´s perspective.” (Crane, F., 2010, p. 144) For instance a furniture manufacturer used customer input to find out the optimal price point that customers were willing to pay for a certain furniture product. Knowing this the company went back and downsized production cost and stripped away cost intensive product features with less value for the customers. Now the company was able to design and produce a product to meet the customers´ target price. (Crane, F., 2010, p. 144)

Knowledge about a customers´ willingness and ability to pay is essential for an effective demand-based pricing strategy. (Crane, F., 2010, p. 144)

3.5 Willingness to pay

Willingness-to-pay represents the highest price an individual is willing to accept to pay for a product or service. (Breidert, C., 2005, p. 27, Skiera, B., Wertenbroch, K., 2002, p. 228) Diller (2008) defines willingness to pay as the absolute price threshold.

Price is usually based on the value a customer expects from a product or service. The perceived value determines the customers´ willingness to pay

which can be charged by a company. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 184, Breidert, C., 2005, p. 27) Willingness to pay does not mandatorily describe only a certain price point but also a price range. (Simon, H., Fassnacht, M., 2009, p. 174) The idea of willingness to pay as an interval is of scientific importance. It defines moreover a measuring method – Price Sensitivity Meter by Peter van Westendorp (1976). (Simon, H., Fassnacht, M., 2009, p. 174) This research method will be discussed in detail within the following chapter.

In principle two concepts regarding willingness to pay can be identified: Maximum Price and Reservation Price. (Breidert, C., 2006, p. 23)

From a customers´ perspective the maximum price of a product is the perceived reference price of the reference product added by the differentiation value between the reference product and the product of interest. (Breidert, C., 2006, p. 24)

Varian (2010) defines reservation price as the highest price a person will accept and still purchase the good. “The price at which the consumer is just indifferent to consuming or not consuming the good is called the reservation price.” (Varian, H., 2010, p. 109)

3.6 Conclusions

Pricing is a complex task within economics (theory) and commercial marketing (practise). To define a profit optimised pricing strategy some information is required.

	Cost-plus pricing	Competitive-based pricing	Value-based pricing
Attributes	Base is always the expenses incurred (variable and fixed cost)	Oriented to the competitor´s price level	The product´s value defines the market price
Procedure	A margin will be calculated on top the known cost	Competitor prices will be adopted or will be used as guidance	Pricing is oriented to willingness to pay of the customers
Pros	Easy to use, because only little information required	Guideline by means of competitor prices given	Price is oriented to the value for the customer Possibility to optimize profit
Cons	Risk of miscalculation, because of missing knowledge about willingness to pay (i.e. too high or too low surcharges)	Risk of price wars due to mutual underbidding	Various information required i.e. the customers regarding willingness to pay

Figure 43: Overview pricing approaches

(Own illustration)

We learned from literature that particularly a demand-based pricing approach is explicitly favourable in respect of an optimised profit. For an effective demand-based and market-oriented pricing it is essential to know what a customer is willing to pay for certain goods (product or service). According to the economic concept of consumer surplus it is also essential to be aware of the consumers´ benefit.

Within the next chapter different research methods to measure customers´ willingness to pay will be discussed in detail.

4 Empiric research approaches within pricing

4.1 Introduction

The previous chapter focussed on the conceptual framework of pricing and the importance of pricing in theory of marketing and in commercial practise. Within this chapter the different existing research methods regarding the evaluation of willingness to pay will be analysed critically.

Firstly the concepts of demand function and price elasticity will be discussed followed by an analysis of the research approaches within pricing. Due to the frequency of use within commercial practise and the research question of this thesis, a focus within the discussion on the different pricing research methodologies will be based on the method of van Westendorp (Price Sensitivity Meter), the approach of Newton, Miller and Smith (Extended Price Sensitivity Meter) and Conjoint Measurement.

The relation of price and demand acts as a central concept within pricing research. (Homburg, C. Kuester, S., Krohmer, H., 2009, p. 164) The price-demand function includes the customers' demand regarding different price points. (Simon, H., Fassnacht, M., 2009, p. 91) Moreover, knowledge about the price-demand function is essential for the implementation of a demand-based pricing approach. (Diller, H., 2008, p. 337)

In principle, before setting prices it is vital for a marketer to be aware of the relationship between price and demand for his product. (Kotler, P.,

Armstrong, G., et.al., 2008, p. 651) This relationship is described by the price-demand function. (Hutzschenreuter, T., 2009, p. 179)

4.2 The price-demand function

In principal, a price-demand function is a formal model which represents the relationship between a price (p) and the corresponding demand (q). (Diller, H., 2008, p. 74) More formally, it can be described as q = q(p). (Simon, H., Fassnacht, M., 2009, p. 91, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 164)

A demand function is always a result of an aggregation of individual price-demand functions. (Simon, H., Fassnacht, M., 2009, p. 92, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 165, Diller, H., 2008, p. 74) This aggregated function shows how many goods will be bought at what price point by all customers. (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 165) This function is usually negative, because the higher the price, the lower the sales volume. (Simon, H., Fassnacht, M., 2009, p. 93, Homburg, C., Kuester, S., Krohmer, H., 2009, p. 165) Considering ceteris paribus, if prices fall the sales volume is expected to increase, and if the price increases the quantity of sold units usually diminishes. (Case, K, Fair, R., Oster, S., 2009, p.122, Kotler, P., Armstrong, G., et.al., 2008, p. 652) Please see the following figure.

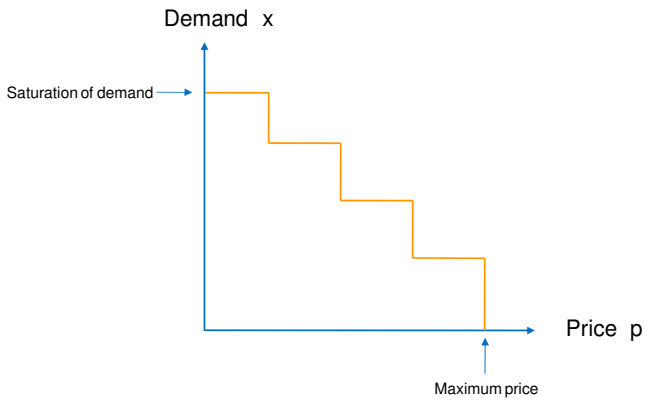


Figure 44: Demand function

(Own illustration, according to: Homburg, C., Kuester, S., Krohmer, H., 2009, p. 165, Simon, H., Fassnacht, M., 2009, p. 93)

According to Diller (2008), a price-demand can be characterised by different variables. (Please see figure 44):

- The value p=0 on the demand function describes the **saturation of demand** where at a price of zero nothing can be sold. (Brede, H., 2004, p. 167)
- The value of f(p)=0 indicates the maximum price where sales falls to zero.
- The relative variance of the sales volume compared to the relative change in price is called price elasticity. (Diller, H., 2008, p. 76)

“If demand hardly changes with a small change in price, we say the demand is inelastic. If demand changes greatly, we say the demand is elastic.” (Kotler, P., Armstrong, G., et.al., 2005, p. 675) Please compare figure 45. Price elasticity expresses the change of sales in per cent, if price is varied by one per cent. (Diller, H., 2008, p. 75)

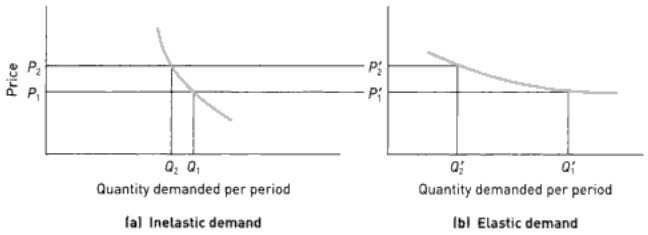


Figure 45: Inelastic and elastic demand

(Kotler, P., Armstrong, G., et.al., 2008, p. 652)

Control of increasing market dynamics and the professionalism of price management require a consistent use of information. This is notably important for pricing policy and affiliated pricing decisions. (Diller, H., 2008, p. 170)

In the following different research approaches concerning pricing research will be discussed from theory supplemented by examples within commercial practice.

4.3 Empiric research approaches within pricing

Principally, in respect of pricing research, the different research methodologies of observations, experiments and surveys are available. (Simon, H., Fassnacht, M., 2009, p. 109, Diller, H., 2008, p. 175, Meffert, H., 2008, p. 537, Bruhn, M., 2007, p. 91, Kotler, P., Keller, K., 2006, p. 440)

<table>
<tr><th colspan="2">Obervations</th><th colspan="3">Surveys</th></tr>
<tr><td>Experiments</td><td>Market observations</td><td>Expert judgements</td><td colspan="2">Customer surveys</td></tr>
<tr><td></td><td></td><td></td><td>Direct surveys</td><td>Indirect surveys</td></tr>
</table>

Figure 46: Methods to determine willingness to pay

(Own illustration, according to: Simon, H., Fassnacht, M., 2009, p. 110)

Voelckner (2006) presented a widened overview regarding research methods to measure willingness to pay:

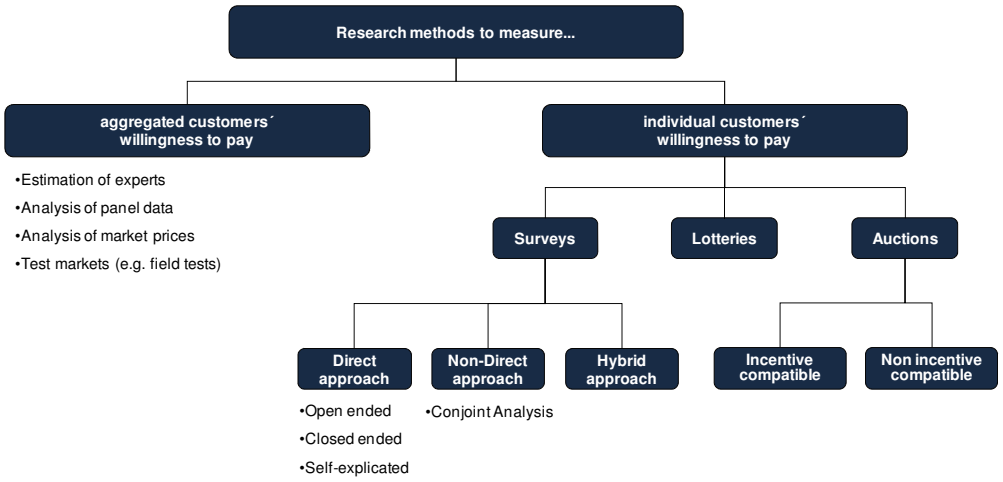


Figure 47: Overview methods to measure willingness to pay

(Own illustration, according to: Voelckner, F., 2006, p. 35)

Siems (2009) showed a more aggregated compilation concerning the different market research approaches which may be used to determine a price-response function i.e. the willingness to pay:

- Customer surveys (direct and indirect)
- Auctions
- Expert surveys (judgements)
- Price experiments; and
- Market data (Siems, F., 2009, p. 105)

A discussion of the different existing empiric methods to measure willingness to pay will be presented later as a combination of the previously presented definitions. This should represent a usable mix of the research approaches already mentioned in various textbooks or scientific articles (i.e. Homburg and Krohmer, 2009, Simon and Fassnacht, 2009; Siems, 2009; Diller, 2008; Kepper, 2008; Kotler and Keller, 2006, Voelckner, 2006, Balderjahn, 2003)

In literature, research techniques with regard to price preference measurement (in terms of direct and indirect surveys) are usually differentiated into composed and decomposed methodologies. (Hillig, T., 2006, p. 33, Fabian, S., 2005, p. 117, Hofer, M., 2003, p. 68) Therefore, this differentiation will be integrated into the discussion.

4.3.1 Observations

“Observation means the methodical and systematic recording of observable facts, behavioural patterns and characteristics of certain individuals.“ (Homburg, C., Kuester, S., Krohmer, H., 2009, p. 612) Berndt, Fantapié Faltobelli, Sander (2005) define observation as a purposeful, methodical collection of perceivable data at the point of occurrence. “Observational research is the gathering of primary data by observing relevant people, actions and situations.” (Kotler, P., et. al., 2005, p. 382) Using this research methodology, particularly the current market price of products can be collected, for instance, by mystery shoppers or through internet research. (Diller, H., 2008, p. 175)

In the context of observations, it is not the statements of the respondents which are taken into consideration, but the conclusions regarding marketing issues that are drawn from the results of the analysis concerning the perceived behaviour. (Bruhn, M., 2007, p. 102)

Generally, observations can be classified by different aspects:

- Field observation versus laboratory observation.
- Personal observation versus instrument-based observation (Bruhn, M., 2007, p. 102)

Within field observation, the behaviour of the test persons is observed under real purchase conditions – for instance, the attitude in a hypermarket, or the use of a cash machine. (Bruhn, M., 2007, p. 102) Regarding laboratory observation, the respondents are faced with a test product under artificial conditions (normally in a specially arranged test room) and their reaction / behaviour is recorded. (Simon, H., Fassnacht, M., 2009, p. 111, Bruhn, M., 2007, p. 102)

In respect of personal observation, the respondent and his behaviour are recorded and interpreted directly by the researcher. This approach is used, for instance, during sales conversations. (Bruhn, M., 2007, p. 102) For instrument-based observation, technical implement comes into operation, in order to measure the respondents´ reaction and behaviour. (Bruhn, M., 2007, p. 102) This can be realised, for example, by the use of video cameras installed inside stores to observe the purchase behaviour of the customers. (Bruhn, M., 2007, p. 103)

Advantages of observations are:

- Data collection through observation can deliver information that respondents may not be willing, or are unable, to provide. (Kotler, P., et. al., 2008, p. 336)

- “Researchers often observe customers behaviour to glean insights they cannot obtain by simply asking customers questions.” (Kotler, P., et. al., 2008, p. 336)
- In comparison to surveys, data collection is independent from the willingness to provide information and from any influence of an interviewer. (Bruhn, M., 2007, p. 103)

Disadvantages / limitations of observational research are:

- Psychological aspects like preferences, attitudes or opinions cannot be measured by observations. (Kotler, P., et. Al., 2008, p. 336, Bruhn, M., 2007, p. 103, Fantapié Altobelli, C., 2007, p. 100)
- Due to smaller sample sizes, observation frequently offers disadvantages regarding statistical reliability (for instance, regarding laboratory observation). Field observation samples are often arbitrary or, in best case, systematic i.e. depending on the location or the time of day when the observation took place (typical for observational research in stores). (Fantapié Altobelli, C., 2007, p. 100)
- Regarding these limitations, observational research is often used along with other market research approaches. (Kotler, P., et. al., 2008, p. 336)

4.3.2 Experiments

Experiments can be seen as a hybrid form between surveys and observations. (Homburg, C., Krohmer, H., 2009, p. 70) An essential goal is the determination of cause and effect correlation. (Homburg, C., Krohmer, H., 2009, p. 70, Berekoven, L., et. al., 2006, p. 154, Koch, J., 2004, p. 94) Within

price experiments, alternative prices are presented to the respondents in order to measure the impact on sales volumes or market shares on the basis of the respondents´ behaviour. (Simon, H., Fassnacht, M., 2009, p. 130, Siems, F., 2009, p. 127) This can be realised either in purchase situations under real conditions, or in a re-adjusted environment. (Simon, H., Fassnacht, M., 2009, p. 130) "Experiments can be conducted in the field or in some kind of laboratory, that is, an artificial situation constructed by the researcher." (McQuarrie, E., 2006, p. 165)

Field experiments are conducted under real sales conditions. Usually, the respondents are not informed about the experiment they attend. (Homburg, C., Krohmer, H., 2009, p. 71, Simon, H., Fassnacht, M., 2009, p. 130, Koch, J., 2004, p, 95) Therefore, the respondents are less biased towards the test environment compared to laboratory experiments. (Homburg, C., Krohmer, H., 2009, p. 71) Field experiments are frequently used within commercial practise for instance to measure price responses. (Diller, H., 2008, p. 204)

The feasibility to minimise the influence of disturbances (i.e. the absence of competition reactions) is crucial for the quality of experiments. (Woehe, G., Doering, U., 2008, p. 398) Referring to this, laboratory experiments are favourable, because external influences can be excluded. (Fantapie Altobelli, C., 2007, p. 139)

Advantages of experiments are:

- Field experiments, especially, deliver significant results regarding the willingness to pay by respondents under real purchase conditions. (Siems, F., 2009, p. 129)
- Experiments afford the opportunity to forecast sales, profit and market share: For instance, a pricing experiment can provide a prediction of an achievable market share and competitive penetration at a specific price point. (McQuarrie, E., 2006, p. 179, Crouch, S., Housden, M., 2003, p. 280)
- Laboratory experiments, in particular, allow confidentiality regarding the experimental content, which is very helpful, for instance, when new products or services are tested. (Fantapie Altobelli, C., 2007, p. 139)

Disadvantages / limitations of experiments are:

- Due to statistical validity, experiments work best when there is a large population of potential respondents. (McQuarrie, E., 2006, p. 180)
- Experiments generally only decide between upfront presented options. In respect of this, experiments provide neither fresh options, nor an indication concerning an optimal possible alternative. (McQuarrie, E., 2006, p. 180)

4.3.3 Auctions

Special forms of experiments are auctions, which can be realised either as laboratory or field experiments. (Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 5) “Procedures that elicit hypothetical willingness to pay do not have any financial consequences for respondents.” (Voelckner, F., 2006, p. 138)

In contrast to this hypothetical research concerning willingness to pay, methods that gather real willingness to pay require that consumers pay the stated price, or the price of the chosen product. Typical examples for such methods are auctions. (Voelckner, F., 2006, p. 138) Depending on a dissemination of the internet, the importance of auctions is increasing. On platforms like www.ebay.com or www.my-hammer.de, products (or services) are sold based on a tendering procedure. (Simon, H., Fassnacht, M., 2009, p. 134)

Auctions can be generally classified into four different types: English auction, Dutch auction, maximum price auction and Vickrey auctions. (Simon, H., Fassnacht, M., 2009, p. 133, Voelckner, F., 2006, p. 38, Adler, J., 2003, p. 22) At English auctions, the participants place their bids in an open form until only one bidder is left over who gets the tender (Siems, F., 2009, p. 125, Voelckner, F., 2006, p. 38) In contrast to this, at Dutch auctions the starting (maximum) price is pre-defined and successively reduced until the first bidder accepts the current price for the product. (Siems, F., 2009, p. 125, Voelckner, F., 2006, p. 38)

At the maximum price and Vickrey auctions, all bids are placed in a sealed form. Within the maximum price auction, the participant with the highest bid wins the auction. Concerning Vickrey auctions, the procedure of the auction is a little different. “If the participant has the highest bid, he or she wins the auction. However, the participant only has to pay the price of the second highest bid. With this mechanism, the participants are provided an incentive to reveal their true valuation, because they must buy the goods if their bid wins the auction.” (Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 5)

Regarding this, Vickrey auctions are often described as “sealed-bid second-price auctions” within literature. (cp. Rutstroem, 1998, McAfee and McMillan, 1987) The validity of the gathered data of Vickrey auctions, in respect of willingness to pay, should be high due to the “incentives” i.e. the rights of the bidder to buy the goods that are auctioned off. (Kaas, K.P., Rupprecht, H., 2006, p. 38)

Advantages of auctions are:

- Experimental auctions represent new and innovative forms in respect of pricing research. Auctions can be realized via the internet. Therefore, it seems to be a very cost-efficient alternative to traditional research methods. Simon, H., Fassnacht, M., 2009, p. 134)
- Auctions, and especially online auctions, have proven to be a practical and effective alternative to traditional pricing policies. (Chang, W-C., Chen, J., Xu, X., 2007, p. 117)

Disadvantages / limitations of auctions are:

- Within an experimental study regarding a comparison of different approaches to estimate willingness-to-pay, Sattler and Nitschke (2003) find that auctions tend to over-estimate consumers’ willingness-to-pay. The authors suppose that this effect is due to the over-bidding phenomenon which occurs when bidders strategically place bids above their real willingness-to-pay, in order to increase their chance of winning. (Diller, H., 2008, p. 199, Breidert, C., 2005, p. 44)
- Higher expenditure in terms of time and cost with respect to auctions compared to other research methods. (Voelckner, F., 2005, p. 19)

4.3.4 Market data

The use of market data can be seen as a special form of experiment with the difference in using past data which has been collected over time. (Siems, F., 2009, p. 129) This data can also be used to determine a price-response function. (Siems, F., 2009, p. 129) Usually, market data has been collected in the past for various other purposes i.e. statistical data like price and sales volumes within retail. (Simon, H., Fassnacht, M., 2009, p. 135) Mandatory for the use of market data in respect of pricing clues is an adequate variance of the independent variable (i.e. the price of a product). If there is no difference in price over time, it is not feasible to use this method within pricing (Simon, H., Fassnacht, M., 2009, p. 135, Wuebker, G., 2004, p. 26)

Advantages of market data are:

- In a multiplicity of markets, historical market data is available in respect of sales volume, price or other variables of the marketing mix. (Wuebker, G., 2006, p. 73)
- Therefore, no additional effort in research is required. (Gieseking, T., 2009, p. 57)

Disadvantages / limitations of market data are:

- With regard to the use of past data, it should be scrutinised critically to determine whether it can be applied in respect of pricing issues; especially concerning a shift of the market conditions like a modified competitive situation or demand behaviour. (Siems, F., 2009, p. 130)

- Historical market data does not usually represent individual purchase decisions, but aggregated sales figures and customer reactions on pre-defined price points. (Gieseking, T., 2009, p. 57)
- Historical data does not contain the required price variations to cover the desired spectrum of willingness to pay. Even small ranges of observed price variations often appear to be a pitfall when analysing historical sales data. Regarding this a classification of willingness to pay estimation based on market data should not be feasible. (Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 4)

4.3.5 Lotteries

Beside auctions, “lotteries” can also be used for the determination of individual bids. A typical example is the approach of Becker / DeGroot / Marschak (1964); the so-called BDM method. (Frohs, M., Backhaus, K., 2008, p. 9, Voelckner, F., 2005, p. 8) Within BDM, the participant first of all indicates his willingness to pay. In a second step, the purchase price is determined randomly by a “lottery“. If the price is under the stated willingness to pay, the participant has to purchase the presented product according to a Vickrey auction. If the price is over the willingness to pay, there is no purchase option. (Voelckner, F., 2005, p. 9)

In the past, the original approach of Becker / DeGroot and Marschak was used at various times concerning measuring the willingness to pay. In respect of market research purposes, the BDM approach was developed by Wertenbroch and Skiera (2002). (Schaefers, B., 2004, p. 42) The main goal of the enhanced idea is to generate a realistic purchase situation by

gathering the required information directly at the point of sale (i.e. within a supermarket) and the fact that the respondents have to use their own money. (Schaefers, B., 2004, p. 42)

Advantages of lotteries are:

- Due to the incentive compatibility, lotteries are considered as a reasonable respectively usable research method concerning pricing issues. (Simon, H., Fassnacht, M., 2009, p. 135)
- Especially with regard to the incentive compatibility, the BDM approach shows theoretical advantages. (Sattler, H., Nitschke, T., 2001, p. 4)

Disadvantages / limitations of lotteries are:

- High financial and operational effort of lotteries; particularly in comparison to other research approaches like direct surveys. (Schaefers, B., 2004, p. 44)
- Due to the fact that the gathered data is based on real transactions only, new products can be tested regarding willingness to pay – no product concepts. (Schaefers, B., 2004, p. 44)

4.3.6 Surveys

“The most popular technique for gathering primary data is survey research, in which a researcher interacts with people to obtain facts, opinions and attitudes.” (Lamb, C., Hair, J., McDaniel, C., 2009, p. 246) Within primary research, surveys are most frequently used for gathering information. (Stokes, D., Wilson, N., 2010, p. 147, Wiid, J., Diggines, C., 2009, p. 106,

Fantapié Altobelli, C., 2007, p. 35, Eckey, H.-F., et.al., 2008, p. 18) Surveys are used to collect information from a sample of respondents with the goal to describe, compare or explain their knowledge, feelings, values or behaviour. (Fink, A., 2006, p. 1, Czaja, R., Blair, J., 2005, p. 3)

From a methodological standpoint, surveys can be differentiated into quantitative and qualitative research, whereby quantitative research techniques tend to gather a multiplicity of statistical data, and qualitative techniques aim to determine psychological or sociological information from a smaller group of respondents. (Fantapié Altobelli, C., 2007, p. 35)

Another criterion to differentiate surveys is the form of data collection. Surveys can be realised in written form, or by personal interviews (face-to-face). (Fantapié Altobelli, C., 2007, p. 35) For an illustration, please see the next figure.

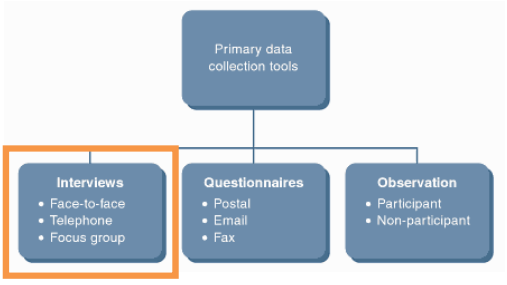


Figure 48: Primary data collection tools and survey methods

(Wilson, J., 2010, p. 137)

In the following, the diverse forms of surveys (direct and indirect) with regard to pricing issues will be presented including an overview in respect of the pros and cons of each method.

4.3.6.1 Direct surveys

The objective of direct surveys is to determine directly the consumers´ individual willingness to pay. (Meffert, H., 2008, p. 538, Roth, S., 2006, p. 22, Balderjahn, I., 2003, p. 391) One of the first applications concerning direct surveys was a method developed by Stoetzel (1954). The idea was that there is usually a maximum and a minimum price for a product which can be gathered by asking the respondents directly. (Breidert, C., Reutterer, T., Hahsler, M., 2006, p. 8) Based on this idea, direct research methods became quite popular over the years e.g. by Abrams 1964, Gabor, Granger 1970, or Stout 1969. (Breidert, C., Reutterer, T., Hahsler, M., 2006, p. 8)

In 1976, Peter van Westendorp introduced his research approach, Price Sensitivity Meter, which will be discussed in detail later in this thesis. Within pricing research, the van Westendorp method (P. van Westendorp 1976) is an especially accepted approach. (Meffert, H., 2008, p. 538)

Within the basic form of direct surveys, the open-ended approach, a respondent is asked only one question in respect of what he or she is willing to pay for a certain and upfront in detail described product. (Voelckner, F., 2006, p. 36, Balderjahn, I., 2003, p. 391) In another form of direct surveys, the closed-end approach, the respondents are faced with different price points for the same product, in order to receive the information at what price point the customer is willing to buy the product. (Voelckner, F., 2006, p. 36) This allows measuring absolute upper or lower price thresholds. (Voelckner, F., 2006, p. 36) Absolute price thresholds are crucial for a respondents´

decision about whether to buy a product or not, and define the minimum and the maximum price of a product. (Trommsdorff, V., 2009, p. 93)

In the broadest sense, also self-explicated models are counted among direct surveys within pricing research. Within this method, the importance of price is queried in relation to other product features and individual willingness to pay, not only for one product, but for single product attributes. (Voelckner, F., 2006, p. 36) In a first step, the respondents have to state their highest and lowest preference in respect of pre-defined values of product attributes like brand, price or quality. Subsequently, the respondents have to state preferences for each attribute.

Based on this data, the overall benefit for the queried product can be generated by adding the weighted single features. (Albers, S., Klapper, D., et. al., 2009, p. 284) Within marketing, self-explicated methods are frequently used. (Sattler, H., 2006, p. 157)

Advantages of direct surveys:

- Within direct surveys, specific issues can be target-oriented queries. (Simon, H., Fassnacht, M., 2009, p. 115)
- Compared to expert judgements, price estimates come from the customers. (Simon, H., Fassnacht, M., 2009, p. 115) This may result in more realistic i.e. market-driven price estimations.
- Direct surveys represent an easy, fast and cost-effective research method. (Gieseking, T., 2009, p. 58, Meffert, H., 2008, p. 175, Roth, S., 2006, p. 22, Backhaus, K., Voeth, M., et.al., 2005, p. 440)

Disadvantages / limitations of direct surveys:

- Within direct surveys, the price is usually reflected in isolation, but in commercial reality, the customers balance costs with benefits. (Simon, H., Fassnacht, M., 2009, p. 116, Woratschek, H., Roth, S., 2006, p. 379) Therefore, from a theoretical standpoint, the respondents´ attention could be focused too much on price, with the result to receive an atypical price measurement. (Simon, H., Fassnacht, M., 2009, p. 116, Woratschek, H., Roth, S., 2006, p. 379, Homburg, C., Krohmer, H., 2003, p. 577)
- "The direct elicitation method appears to understate (overstate) the variation in reservation prices across consumers for low-priced (high-priced) products and bundles." (Jedidi, K., Jagpal, S., Manchada, P., 2003, p. 107)

4.3.6.2 Indirect surveys

Beside direct surveys, pricing issues can also be researched by using indirect surveys where customers are asked not only about price or willingness to pay, but about an overall assessment concerning the product or service (including price). (Siems, F., 2009, p. 110) The basic idea is to ask customers in respect of different product alternatives in total. (Voelckner, F., 2006, p. 36)

Therefore, price is not the focus, but just one element or attribute of the queried product. (Simon, H., Fassnacht, M., 2009, p. 116, Homburg, C., Krohmer, H., 2009, p. 669)

In this context (i.e. regarding price management) the research methodology, Conjoint Measurement, is of particular importance. (Simon, H., Fassnacht, M., 2009, p. 117, Homburg, C., Krohmer, H., 2009, p. 669) Within this method, the respondents are asked to weigh between price and the perceived value. In respect of the indirect procedure, a hypothetical bias on price can be minimised. (Homburg, C., Krohmer, H., 2009, p. 669) The market research method of Conjoint Measurement will be discussed later in this chapter (within the context of decomposed measurement).

Advantages of indirect surveys:

- If the respondents are faced with a number of products with different prices, a purchase situation seems to be mimicked more realistically than in direct surveys. (Breidert, C., 2006, p. 46)
- Compared to direct surveys, a higher validity of data is assumed for indirect research approaches. (Roth, S., 2006, p. 33) Customers are not asked directly about their willingness to pay. The impact of price can be determined in respect of their statements on preferences. (Simon, H., Fassnacht, M., 2009, pp. 129,144)

Disadvantages / limitations of indirect surveys:

- Compared to direct surveys, the procedure of indirect surveys is more complex and less easy to handle – especially regarding data collection. (Sattler, H., Hensel-Boerner, S., 2007, p. 69)
- In respect of a sophisticated data collection, the (statistical) analysis of the gathered information is also more complex. Either specialised

software or advanced statistical knowledge is needed. (Sattler, H., Hensel-Boerner, S., 2007, p. 69)

- Indirect surveys (like Conjoint Measurement) require higher costs in data collection and data analysis. (Sattler, H., Hensel-Boerner, S., 2007, p. 69)

4.3.7 Expert judgements

Within expert judgements, specialists with knowledge about markets, market segments, or price information are interviewed. Experts with regard to pricing could be:

- internal employees like the general manager, or sales people,
- external consultants with special knowledge concerning pricing,
- retailers, or customer service representatives.

(Simon, H., Fassnacht, M., 2009, p. 110)

Expert judgements are normally used for complex, new and hard to structure forecasts. (Simon, H., Fassnacht, M., 2009, p. 110, Fantapie Altobelli, C., 2007, p. 384) Typical applications are sales predictions for new products without existing market information, or long-term forecasts within the technological area. (Fantapie Altobelli, C., 2007, p. 384) Expert judgements offer advantages if surveys seem to be too expensive or too time consuming. (Simon, H., Fassnacht, M., 2009, p. 110)

Advantages of expert judgements:

- In comparison to other forms of surveys or laboratory tests, expert judgements are quicker and cheaper, and are also suitable for product ideas. (Siems, F., 2009, p. 127, Wuebker, G., 2004, p. 30)
- From experience, expert judgements deliver reliable information regarding price demand functions. (Wuebker, G., 2004, p. 30)
- In particular, for real innovations or new market situations (like a product launch or market entry) expert judgements are often the most practicable approach for gathering market data. (Siems, F., 2009, p. 127)

Disadvantages / limitations of expert judgements:

- The results of expert judgements usually only rely on internal information. Therefore, the validity of the gathered information depends on the quality of the experts´ valuation. (Wuebker, G.,2004, p. 30)
- This market research approach mostly delivers only a qualitative rough approximation regarding pricing issues, because typically, it depends solely on a choice of prices, or price points, of a price-response function. (Siems, F., 2009, p. 127)

4.4 Composed and decomposed procedures for preference measurement

Principally, preference data can be determined in different ways: by composed and decomposed procedures. The idea of decomposed methods is to create an overall assessment of a product, or service, by the breakdown in (attribute specific) part worth utilities (Hartmann, A., 2004, p. 55) Within composed research approaches, attribute specific judgements are

determined in a direct way. (Hartmann, A., 2004, p. 55) Pricing questions can be researched either by composed or decomposed methodologies. (Roth, S., 2006, p. 23)

4.4.1 Composed Value Measurement

For an overview regarding composed measurement methodologies in the following, a set of research approaches, which are frequently used within commercial practise, will be presented.

4.4.1.1 Gabor Granger research approach

The Gabor Granger research approach is named after the business economists who invented the model in the 1960s. (Lieberman, M., 2009, p. 46, Farace, V., 2008, p. 3, Xu, J., 2005, p. 177, Hague, N., 2004, p. 3) “Customers are surveyed to see whether they would buy a product at a particular price. The price is varied until it reaches the level where customers say they would not buy the product, resulting in the optimal price for each person.” (Lieberman, M., 2009, p. 46) The gathered data can be used to calculate demand levels (i.e. the percentage of respondents who would buy) for the product at each of the different price levels, tested with interpolated prices in between. (Parrott, S., Mirabile, R., Scholder, T., 2008, p. 5) To determine price sensitivity, it is essential to test different price points/options. (Cram, T., 2006, p. 27, Baker, M.J., Hart, S., 2003, p. 283)

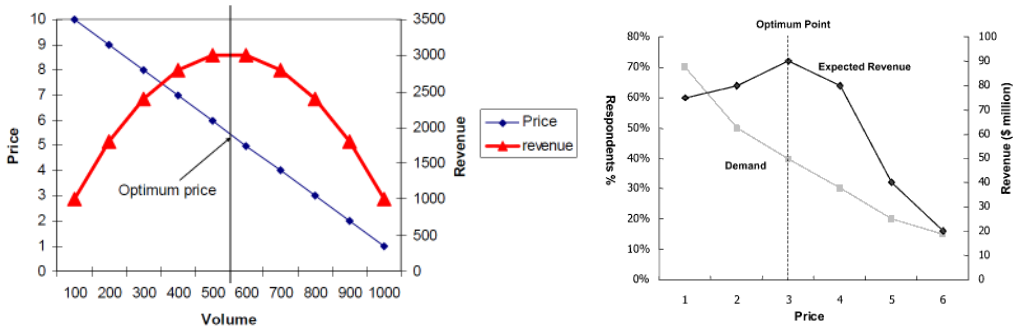


Figure 49: Gabor Granger Output

(Parrott, S., Mirabile, R., Scholder. T., 2008, p. 5) (Xu, J., 2005, p. 178)

Based on the generated results, the optimum price for each respondent, as well as an aggregated price-demand curve, including an optimum price for all participants, can be worked out. (Xu, J., 2005, p. 178, Hague, N., 2004, p. 3) This method can be used to predict demand at different price levels and to determine/forecast optimum revenue. (Cram, T., 2006, p. 28)

Advantages of the Gabor Granger approach:

- With this method, useful information for a company in terms of indicators regarding launching a new product or entering a new market can be queried by using an easy procedure. (McNeill, R., 2005, p. 183)
- Gabor Granger tests are simple, defensible and frequently used to predict purchase probability and demand curves. (Cram, T., 2006, 28, Roth, S., 2006, p. 36)

Disadvantages / limitations of the Gabor Granger approach:

- Customers may either understate, or overstate, their willingness to pay, because of the isolated review of price. (Xu, J., 2005, p. 178)

- The Gabor Granger method is typically used in conjunction with only one test product, but in commercial reality, customers usually can, or have to, decide between different products or alternatives. (Xu, J., 2005, p. 178)

4.4.1.2 Price Sensitivity Meter by van Westendorp

Price Sensitivity Meter which was developed in 1976 by the Dutch economist, Peter van Westendorp, is a popular direct survey approach within pricing research. (Simon, H., Fassnacht, M., 2009, p. 174, Homburg, C., Krohmer, H., 2009, p. 667) Price Sensitivity Meter can be seen as a method to measure the price sensitivity of consumers. (Homburg, C., Krohmer, H., 2009, p. 667, Reinecke, S., Muehlmeier, S., Fischer, P.M., 2009, p. 97)

Based on the work of Gabor and Granger (1966) on the price-quality relationship, and Monroe (1970/1971) and Stoetzel (1970) on the psychological aspects of price, the Price Sensitivity Meter model is one of the first efforts to integrate a psychometric approach to Price Sensitivity Meter. (Harmon, R., Raffo, D., Faulk, S., 2003, p. 317) The research approach was developed to optimise and enhance the Gabor Granger approach. (Farace, V., 2008, p. 4, Cram, T., 2006, p. 29, Voelckner, F., 2006, p. 56) Within this research method, it is assumed that there is always a price range for a product. (Reinecke, S., Muehlmeier, S., Fischer, P. M., 2009, p. 97, Piller, F. T., Hoenigschmid, F., Mueller, F., 2002, p. 4) “The underlying premise of this model is that there is a relationship between price and quality and that consumers are willing to pay more for a higher quality product.” (Weiner, J., 2002, p. 112)

The Price Sensitivity Meter methodology generally consists of four questions. After an explanation of the product these questions are presented to the respondents to gather relevant information concerning willingness to pay. (Homburg, C., Krohmer, H., 2009, p. 667, Reinecke, S., Muehlmeier, S., Fischer, P. M., 2009, p. 98, Harmon, R., Raffo, D., Faulk, S., 2003, p. 318)

The questions are:

Q1. At which price (on the scale) do you consider the product to be cheap?

Q2. At which price (on the scale) do you consider the product to be expensive?

Q3. At which price (on the scale) do you consider the product to be too expensive so that you would never consider buying it?

Q4. At which price (on the scale) do you consider the product to be too cheap so that you would question its quality?

(Reinecke, S., Muehlmeier, S., Fischer, P. M., 2009, p. 98, Harmon, R., Raffo, D., Faulk, S., 2003, p. 318, Weiner, J., 2002, p. 112)

In commercial practice, the wording of the proposed question varies in respect of the researcher and the application. (Miller, J., Newton, D., Smith, P., 1993, p. 5)

The results of Price Sensitivity Meter of the different questions are visualised within a diagram with the price on the abscissa and the cumulated proportion of the respondents on the ordinate. (Lehmann, S., Draisbach, T., et. al., 2010, p. 166, Reinecke, S., Muehlmeier, S., Fischer, P. M., 2009, p. 98)

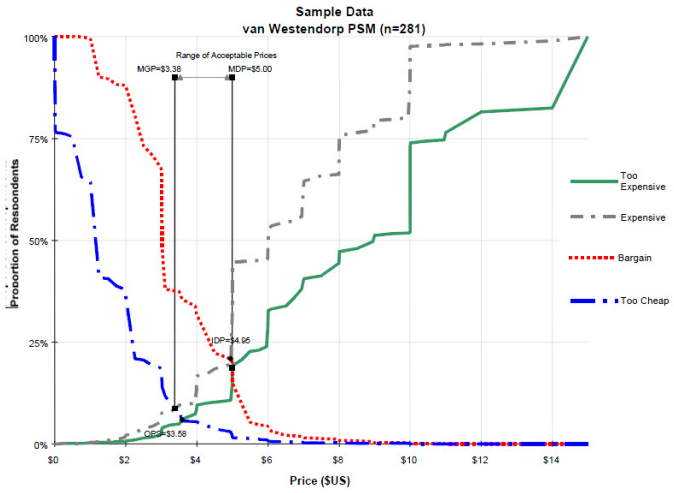


Figure 50: Sample diagram of van Westendorp methodology

(Weiner, J., 2002, p. 112)

The different curves and their intersection points can be interpreted as follows:

- The intersection point of the curves “bargain” and “expensive” defines a price point where 50% of all respondents consider the queried product as beneficial and 50% of the respondents as expensive. Therefore, this price point is called the “indifference price”. (Simon, H., Fassnacht, M., 2009, p. 175)
- A price ceiling is defined by the intersection of the curves “bargain” and “too expensive”. (Homburg, C., Krohmer, H., 2009, p. 667). Above this price point, the willingness to pay decreases significantly, because of the high price. (Simon, H., Fassnacht, M., 2009, p. 175)
- The price floor can be described by the intersection point of the curves “too cheap” and “expensive”. Below the price floor, the willingness to pay is reduced, due to the fact that the respondents consider the product to be of low quality. (Simon, H., Fassnacht, M., 2009, p. 175)

- The intersection point of the curves “too cheap” and “too expensive” defines the so called “penetration price” where the respondents state the product as beneficial. At this “penetration price” the fewest respondents refuse to buy the presented product, because of an unacceptable pricing with an effect of highest expected sales volume. (Simon, H., Fassnacht, M., 2009, p. 175)
- In between the price floor and the price ceiling there is the acceptable price range, which is accepted by a predominant percentage of the respondents (Homburg, C., Krohmer, H., 2009, p. 667, Berekoven, L., 2009, p. 278)
- “The optimum price point (OPS) represents the point at which an equal number of respondents see the product as too expensive and too cheap. This represents the “ideal” price for this product.” (Weiner, J., 2002, p. 113) The OPP is also the recommended price from Price Sensitivity Meter analysis. (Miller, J., Newton, D., Smith, P., 1993, p. 8)

Advantages of Price Sensitivity Meter:

- Easy implementation, realisation and analysis of the results.
- Applicable concerning the determination of price thresholds.
- Research approach delivers relevant information in respect of price levels (upper and lower) as well as penetration and indifference prices. (Simon, H., Fassnacht, M., 2009, p. 176)

Disadvantages / limitations of Price Sensitivity Meter:

- Possibility of over-emphasis of price, because of an isolated reflection. (Simon, H., Fassnacht, M., 2009, p. 176)
- No opportunity to gather a price-response function in order to determine a sales, or profit-optimised, market price. (Simon, H., Fassnacht, M., 2009, p. 176)
- Price Sensitivity Meter is limited concerning the examination of consumer attitudes in respect of price. (Miller, J., Newton, D., Smith, P., 1993, p. 12)

With the Price Sensitivity Meter methodology by van Westendorp, only an acceptable price range where a majority of respondents would be willing to buy the product could be determined, not a price-response function. (Simon, H., Fassnacht, M., 2009, p. 175) Van Westendorp himself refers to a central limitation of Price Sensitivity Meter: “A word of caution is in order: price-consciousness of this nature should never be equated with propensity to buy. One can be fully conscious that a product is “expensive” and yet prefer it over a cheaper alternative.” (van Westendorp, P., 1976, p. 147 in: Miller, J., Newton, D., Smith, P., 1993, p. 11)

With regard to this limitation concerning pricing issues, Newton, Miller and Smith (1993) developed the Price Sensitivity Meter method in order to include the possibility to gather price-response information.

4.4.1.3 Extended Price Sensitivity Meter

Citations or quotes regarding the Extended Price Sensitivity Meter model are very limited. Therefore, within this chapter the description of the methodology is predominantly based on the original article by Jeff Miller, Dennis Newton and Paul Smith. This paper was prepared and presented for the first time in respect of the Advanced Research Technique Forum of the American Marketing Association (AMA Art Forum) in June 1993.

“Newton, Miller and Smith (1993), offer an extension of the van Westendorp model. With the addition of two purchase probability questions (BARGAIN and EXPENSIVE price points), it is possible to plot trial and revenue curves.” (Weiner, J., 2002, p. 113)

Due to the fact that Price Sensitivity Meter is limited regarding a reflection of consumers’ attitude in respect of price, the authors of the Extended Price Sensitivity Meter propose to integrate the measurement of willingness to pay into the Price Sensitivity Meter model. The Extended Price Sensitivity Meter focuses on the price perception and identifies optimal price points. (Kleindorfer, P., Szirmay, Z., 2009, p. 27)

The authors aim is to combine price expectations and purchase probability (i.e. willingness to pay) in order to determine price demand functions (Miller, J., Newton, D., Smith, P. 1993, p. 12) With extra questions, it is possible to integrate price perceptions into the Price Sensitivity Meter model. (Weiner, J., 2002, p. 113, Miller, J., Newton, D., Smith, P. 1993, p. 12) Therefore, the

respondents are faced with two additional (to the PSM methodology) questions:

“How likely would you be to buy (subscribe to) this service at (the stated price point) expensive $;

definitely would buy,

probably would buy,

might or might not buy,

probably would not buy,

definitely would not buy?” (Miller, J., Newton, D., Smith, P. 1993, p. 12)

This question is repeated for the customer’s “inexpensive” price point inserted. Respondents are thought to have zero purchase probability in respect of their stated prices at “too expensive” and “too inexpensive”. Therefore, purchase intentions are not asked for at these price points. (Weiner, J., 2002, p. 113, Miller, J., Newton, D., Smith, P. 1993, p. 13)

The authors remark that the purchase intention scale is not fixed; it can be adjusted to personal needs (e.g. 4-point purchase intent scale). Also, other questions regarding additional purchase factors like value for money, or willingness to consult others, can be asked, or included, into the purchase intention section. (Miller, J., Newton, D., Smith, P. 1993, p. 13)

“By plotting the probability of purchase at each price point, we can identify the price that will stimulate maximum trial. By multiplying the proportion of people who would purchase the product at each price by the price of the product, we generate the revenue curve.” (Weiner, J., 2002, p. 113) The

respondents are assumed to have zero purchase probability at their “too inexpensive”, as well as their “too expensive” price point. (Miller, J., Newton, D., Smith, P. 1993, p. 15) The following figure illustrates the gathered price-demand information by EPSM:

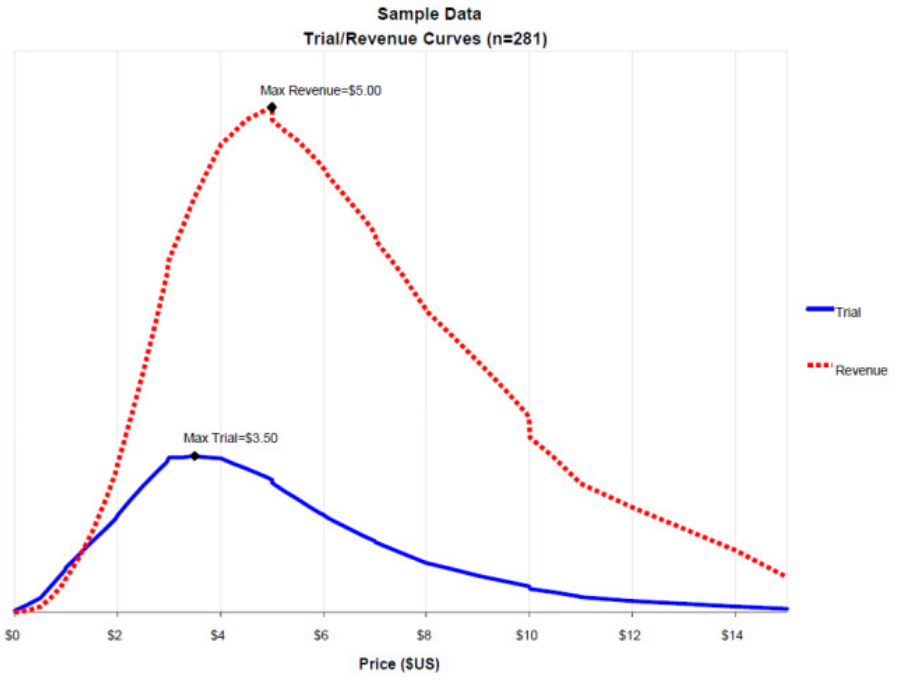


Figure 51: Trial / Revenue curves by Extended Price Sensitivity Meter

(Weiner, J., 2002, p. 114)

Within figure 51, the determined purchase intention ratings are transformed to purchase likelihood. For instance, 90% of the respondents stated “definitely”, 40% of the respondents “probably”, and 10% of the respondents “might”. (Miller, J., Newton, D., Smith, P. 1993, p. 15) The purchase probabilities are calculated for each single respondent and are (in a next step) aggregated across all participants in order to generate a price demand curve at all prices. (Miller, J., Newton, D., Smith, P. 1993, p. 15)

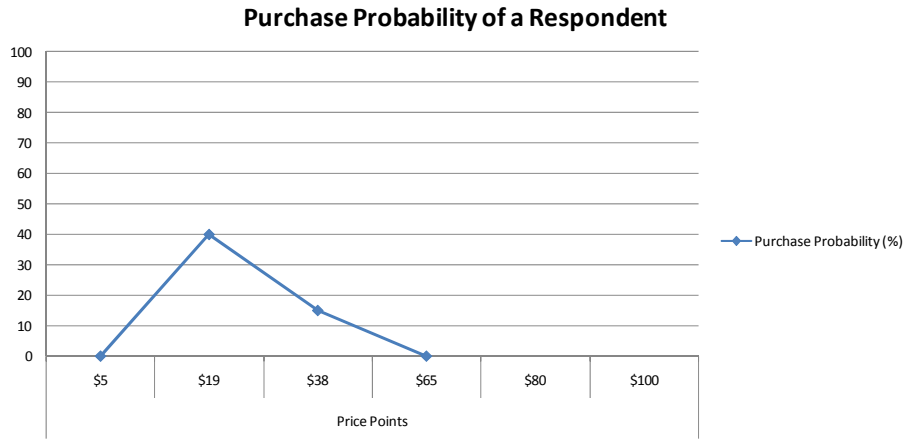


Figure 52: Purchase probability of a respondent

(Own illustration, according to Miller, J., Newton, D., Smith, P., 1993, p. 15)

Advantages of Extended Price Sensitivity Meter:

- The Extended Price Sensitivity Meter can be seen as an easy-to-apply pricing research methodology. (Miller, J., Newton, D., Smith, P. 1993, p. 24)
- An advantage over traditional Price Sensitivity Meter is the possibility to determine the likely reaction to prices which are not optimal, because slight variations to the optimum price could, or could not, affect a predicted profit. (Miller, J., Newton, D., Smith, P., 1993, p. 23)
- The gathered prices are believed to represent the actual out-of-pocket payments. (Weiner, J., 2002, p. 121)

Disadvantages / limitations of Extended Price Sensitivity Meter:

- If competition exists, the Extended Price Sensitivity Meter method cannot measure draw. (Miller, J., Newton, D., Smith, P. 1993, p. 25)
- The authors see limitations of Extended Price Sensitivity Meter regarding its applicability. The Extended Price Sensitivity Meter is

recommended for use on product concepts, and not on products or services that are ready for an immediate market launch. (Miller, J., Newton, D., Smith, P. 1993, pp. 25, 26)

- Due to limited existing literature concerning the traditional, as well as the extended Price Sensitivity Meter, a lack of validation can be remarked. This may carry a risk compared to established methods. (Miller, J., Newton, D., Smith, P. 1993, p. 26)

4.4.2 Decomposed Value Measurement

Regarding decomposed measurement methodologies, the overall evaluations on presented alternatives are firstly decomposed into part-worth of the respective attribute-levels. Then, the total utility of a product is computed as the sum of the part-worth of the respective attribute-levels. (Helm, R., et. al., 2004, p. 1) "Several methods are known in science and practice to survey preferences of customers, while most practical and theoretical applications in marketing use the conjoint analysis." (Helm, R., et. al., 2004, p. 1)

4.4.2.1 Conjoint Measurement

In the 1960s, the basic (mathematical) idea of Conjoint Measurement was developed by the psychologist, Luce, and the statistician, Tukey, and was used firstly within the area of psychology. (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 3, Klein, M., 2002, p. 7) At the beginning of the 1970s, this research method was introduced with regard to marketing issues by Green and Rao. (Klein, M., 2002, p. 7)

Today, Conjoint Measurement is by far the most frequently used research method for analysing consumer trade-off. (Green, P., Krieger, A., Wind, Y., 2001, p. 4) “The conjoint analysis (CA) is a decompositional method measuring preferences on complete stimuli (alternatives) described by several attribute-levels of at least two attributes.” (Helm, R., Steiner, M., Scholl, A., Manthey, L., 2004, p. 1) This decomposition is realised by the use of a preference model which copies the cognitive process of preference building of the customers, as realistically as possible. (Diller, H., 2008, p. 190)

Usually, a customer does not pay for a product or service itself, but for the satisfaction of his or her needs. In a real purchase situation, the customers do not decide just in respect of price. He or she compares the price and the perceived value. This trade-off is represented by the methodology of Conjoint Measurement. (Simon, H., Fassnacht, M., 2009, p. 116)

The goal of conjoint analysis is to clarify and forecast (customer) preferences that result in an assessment of achievements. (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 4) The idea is to answer the question of the perceived benefit, and the “conjoined” willingness to pay, of the customers. (Simon,H., Fassnacht, M., 2009, p. 116)

Within Conjoint Measurement, the willingness to pay is determined not isolated, but always related to the benefit of all relevant purchase options. (Diller, H., 2008, p. 190, Wuebker, G., 2004, p. 25) This methodology

represents a mathematical approach where (randomised) respondents are asked about their preferences and the relative value of different product features. (Berndt, R., 2004, p. 235)

“Conjoint analysis has become one of the most widely used quantitative tools in marketing research. When used properly, it provides reliable and useful results.” (Orme, B., 2009, p. 1) Today Conjoint Measurement is one of the most frequently used research methods within marketing. (Simon, H., Fassnacht, M., 2009, p. 116, Green, P., Krieger, A., Wind, Y., 2001, p. 3) Especially, regarding pricing issues (i.e. the determination of price-response functions) the results of conjoint analysis are of special importance. For instance, by the use of Conjoint Measurement the customers´ willingness to pay can be determined in respect of a variance of single product features like quality, service or design. (Homburg, C., Krohmer, H., 2009, p. 396) “Conjoint analysis is one tool that provides the flexibility of altering features and estimating the impact on unit demand.” (Weiner, J., 1994, p. 11)

In the following, a set of Conjoint Measurement approaches will be presented (the most popular form out of each subset).

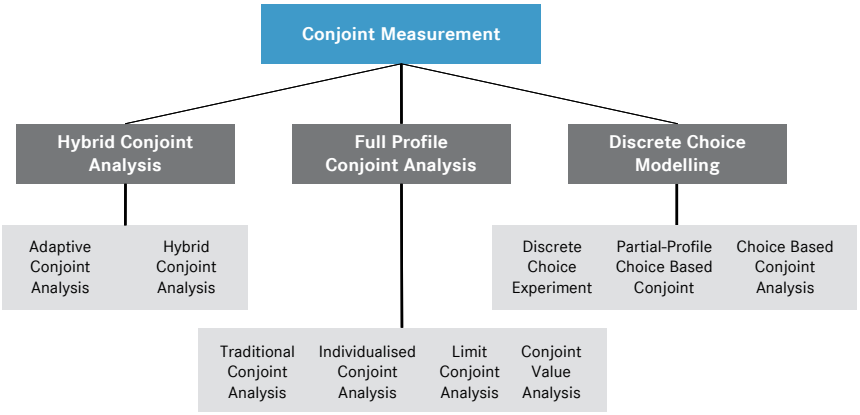


Figure 53: Forms of Conjoint Measurement

(Own illustration, according to: TNS infratest, 2008)

Currently Choice Based Conjoint Analysis followed by Adaptive Conjoint Analysis and Traditional Conjoint Analysis are the most frequently used types of conjoint approaches. (Sattler, H., Hartmann, A., 2008, p. 116)

Regarding pricing issues, Choice Based Conjoint Analysis (CBC) is the preferred method in commercial practise, while Traditional Conjoint and Adaptive Conjoint Analysis are mainly used in respect of product development. (Sattler, H., Hartmann, A., 2008, p. 116) Since the 1990s, CBC becomes more and more popular in respect of pricing research. Within the segment of Conjoint Analysis, the CBC method claims an exceptional position. (Balderjahn, I., Hedergott, D., Peyer, M., 2009, p. 129, Siems, F., 2009, p. 121) CBC delivers highly reliable results concerning willingness to pay. (Simon, H., Fassnacht, M., 2009, p. 127)

4.4.2.1.1 Traditional Conjoint Analysis

The basis of the Traditional Conjoint Analysis can be found in the work of Luce and Tukey in the 1960s. (Hillig, T., 2006, p. 37) Within Traditional Conjoint Analysis (TCA) the presented alternatives are built by a systematic combination of pre-defined features and their attributes. (Boehler, H., Scigliano, D., 2009, p. 101) Usually, these estimates can be realised by the use of ranking or rating methodologies. (Boehler, H., Scigliano, D., 2009, p. 102, Hillig, T., 2006, p. 3) “In a traditional ratings-based full-profile conjoint, respondents are presented the products on a series of cards.” (Grover, R., Vriens, M., 2006, p. 291) In the following, the overall judgement of each respondent regarding the queried concepts are gathered, and the partial

benefits can be calculated. (Boehler, H., Scigliano, D., 2009, p. 101) Therefore, conjoint analysis is referred to as a decomposed method within preference measurement. (Boehler, H., Scigliano, D., 2009, p. 101)

In the following figure the (typical) application flow of a Traditional Conjoint Analysis is illustrated:

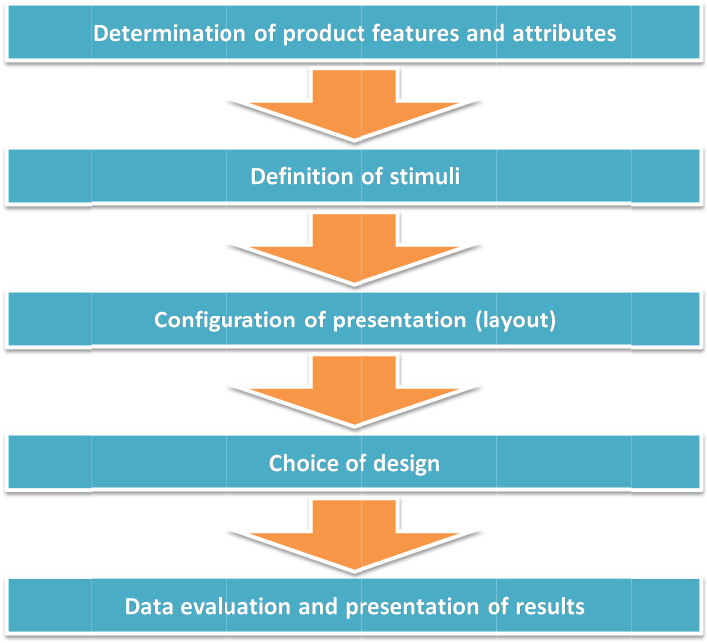


Figure 54: Application flow of Traditional Conjoint Analysis

(Own illustration, according to: Boehler, H., Scigliano, D., 2009, p. 103)

Advantages of Traditional Conjoint Analysis (TCA):

- Due to the realistic purchase situations, TCA is superior in respect of less biased pricing decisions of the respondents. (Gieseking, T., 2009, p. 64)
- TCA delivers reliable results in respect of a minor number of queried features which means between six and nine. (Fabian, S., 2005, p. 153)

Disadvantages / limitations of Traditional Conjoint Analysis:

- In literature, TCA is discussed with limitations concerning the maximum number of features and corresponding attributes, because the use of a higher number of features may lead to an overload of information to the respondents. (Homburg, C., Krohmer, H., 2009, p. 399, Simon, H., Fassnacht, M., 2009, p. 124, Sattler, H., Hartmann, A., 2008, p. 112, Sattler, H., Hensel-Boerner, 2001, p. 2)
- Hence TCA cannot be applied in respect of complex purchase decisions. (Albers, S., Klapper, D., et. al., 2009, p. 285, Gieseking, T., 2009, p. 64, Hillig, T., 2006, p. 3)

Based on the limitations of TCA, diverse enhancements like Choice Based Conjoint Analysis have developed. (Hillig, T., 2006, p. 3)

4.4.2.1.2 Adaptive Conjoint Measurement

Johnson (1987, 1991) and Green/Krieger/Agarwal (1991) introduced Adaptive Conjoint Measurement as a research method to quantify consumers´ preference structure. (Herrmann, A., Huber, F., Rieger, S., 2009, p. 114, Wittink, D., Fiedler, J., Miller, R., 1991, p. 1) Within this computer-assisted methodology, the previously gathered information of the respondents is used in the following question round of the interview. (Raab, G., Unger, A., Unger, F., 2009, p. 333) Every answer leads to increasing transparency regarding the personal preference structure of the respondent, and non-relevant data (based on the upfront statements) will be excluded. (Siems, F., 2009, p. 112, 113)

The software adapts the queried product, or service bundle, to the individual needs and requests of the respondent – therefore this research approach is called adaptive. (Herrmann, A., Huber, F., Regier, S., 2009, p. 114) "The procedure is adaptive in a sense that each paired comparison is constructed, so as to take advantage of the information collected about the respondent's part-worths in the previous steps." (Rao, V., 2007, p. 27)

The Adaptive Conjoint Measurement method consists of two steps: a composed and a decomposed part. First, within the composed part of the research, the respondent has to rate his individual favourite product attributes. Then, he or she should make judgements about different product alternatives, like a bundle of different product attributes. (Hermann, A., Huber, F., Regier, S., 2009, p. 114) "Adaptive Conjoint Analysis combines stated preferences and attributes importance ratings with paired comparison tasks." (Grover, R., Vriens, M., 2006, p. 296)

Due to its composed and decomposed part, Adaptive Conjoint Measurement can be seen as a form of hybrid conjoint analysis. In contrast to classical hybrid conjoint analysis, the interview (data collection) within Adaptive Conjoint Measurement is completely conducted by computer. (Fabian, S., 2005, p. 177)

Advantages of Adaptive Conjoint Measurement:

- Adaptive Conjoint Measurement was developed explicitly to handle studies (conjoint analysis) with a higher number of features and attributes (>30 features and >9 attributes per feature) of the queried

product/service. (Hermann, A., Huber, F., Regier, S., 2009, p. 124, Sattler, H., Hartmann, A., 2008, p. 112)

- The computer-assisted methodology may lead to a higher level of attention by the respondents. (Hermann, A., Huber, F., Regier, S., 2009, p. 124) "The computer could adapt the survey to each individual in real time, asking only the most relevant trade-offs in an abbreviated, more user-friendly way that encouraged more realistic responses." (Orme, B., 2006, p. 27)
- Another advantage is the easy handling of the methodology. The designer of the interviews only has to define the factors and data which have to be analysed. The ranking of the features or attributes is completely conducted by computer. (Hermann, A., Huber, F., Regier, S., 2009, p. 124)

Disadvantages / limitations of Adaptive Conjoint Measurement:

- In literature, the paired comparison procedure is discussed as unrealistic. (Herrmann, A., Huber, F., Regier, S., 2009, p. 125)
- Orme (2009) defines the understatement/underestimation regarding the determination of the importance of price as a major weakness of Adaptive Conjoint Measurement. "When price was included as just one of many variables, its importance was likely to be understated, and the degree of understatement increased as the number of attributes studied increased." (Orme, B., 2009, p. 2)

- Another limitation of Adaptive Conjoint Measurement can be seen that it needs to be computer-administrated. Adaptive Conjoint Measurement can only be conducted by computer, and not with paper and pencil. (Orme, B., 2009, p. 2, Gaedeke, O., Schubert, A., Melles, T., 2003)

4.4.2.1.3 Choice Based Conjoint Measurement

The idea of Choice Based Conjoint Measurement goes back to Louviere and Woodworth in 1983 (Balderjahn, I., Hedergott, D., Peyer, M., 2009, p. 129, Teichert, T., Shehu, E., 2009, p. 25, Helm, R., Steiner, M., 2008, p. 234), as well as to the Discrete Choice approach of McFadden in 1980/1981. (Siems, f., 2009, p. 121, Diller, H., 2008, p. 195) The goal is to define the consumers´ purchase decisions by a decomposed assessment of the presented product features. (Balderjahn, I., Hedergott, D., Peyer, M., 2009, p. 129, 130) With Choice Based Conjoint Measurement, the disadvantages of Traditional Conjoint Measurement should be minimised. (Homburg, C., Krohmer, H., 2009, p. 406)

Today, Choice Based Conjoint Measurement is (one of) the most frequently used conjoint research approaches concerning price preference measuring. (Orme, B., 2009, p. 2) A study within the German market shows that nearly 50% of all researchers use Choice Based Conjoint Measurement. (Voelckner, F., Sattler, H., Teichert, T., 2008, p. 689, Sattler, H., Hartmann, A., 2008, p. 110)

Within Choice Based Conjoint Measurement, the respondents are put, hypothetically, into a (real) purchase situation/decision. The customers are faced with two or three alternatives from which he or she has to choose one alternative – optionally added by the option “nothing of both”. (Homburg, C., Krohmer, H., 2009, p. 406, Simon, H., Fassnacht, M., 2009, p. 127) Therefore, Choice Based Conjoint Measurement is seen as a very realistic methodology within the Conjoint Measurement “family”. (Herrmann, A., Huber, F., 2008, p. 177, Gaedeke, O., Schubert, A., Melles, T., 2003)

The following example illustrates an example of Choice Based Conjoint Measurement for a Pay-Tv offer in the German consumer market. The respondents are asked to choose the alternative with their highest purchase probability (if applicable there is also a no-choice option).

Figure 55: Alternative product bundles in the context of CBC

(Own illustration, according to: Sattler, H., 2006, p. 6)

Simon and Fassnacht (2009) present another example of Choice Based Conjoint Measurement within an automotive context:

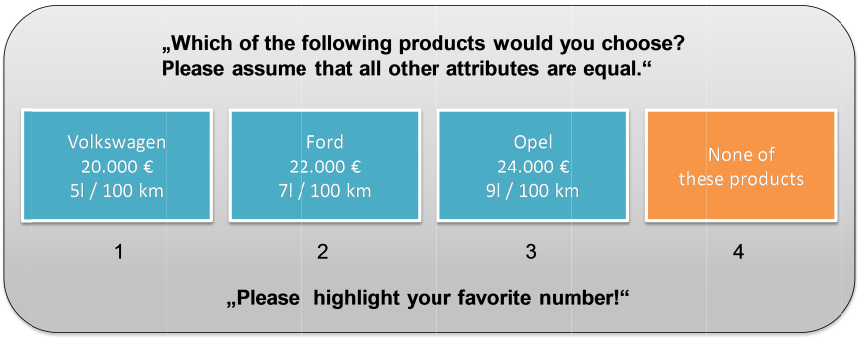


Figure 56: Example of Choice Based Conjoint Analysis

(Own illustration, according to: Simon, H., Fassnacht, M., 2009, p. 127)

Orme (2010) uses a similar (question) design to illustrate the procedure of Choice Based Conjoint Measurement in respect of the computer industry:

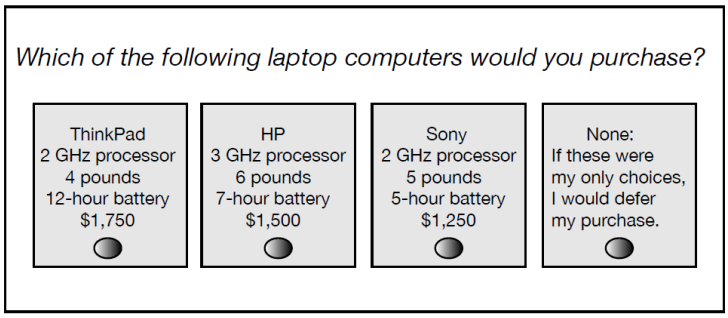


Figure 57: Choice Based Conjoint question

(Orme, B., 2010, p. 21)

Advantages of Choice Based Conjoint Measurement:

- In comparison to other conjoint approaches with Choice Based Conjoint Measurement it is possible to reproduce real purchase decisions. For all other conjoint analytical methods additional assumptions are required, because of missing information regarding purchase decisions. (Backhaus, K., Erichson, B, Pinke, W., 2006, p. 612)

- The part-worth utilities reflect the impact on product choice, rather than a change in rating or ranking. (Desarbo, W., Ramaswamy, V., Cohen, S., 1995, p. 137)
- Another advantage of Choice Based Conjoint Measurement is a relatively short duration of the interviews. (Steiner, M., 2007, p. 72)
- In respect of gathering information regarding willingness to pay, Choice Based Conjoint Measurement delivers statistically valid results. Normally, the use of Choice Based Conjoint Measurement leads to a more differentiated view on the importance of attributes. (Homburg, C., Krohmer, H., 2009, p. 407)

Disadvantages / limitations of Choice Based Conjoint Measurement:

- With Choice Based Conjoint Measurement, it is not feasible to directly estimate part-worths at the individual level, because usually too few data points are obtained. (Homburg, C., Krohmer, H., 2009, p. 407, Simon, H., Fassnacht, M., 2009, p. 127, Steiner, M., 2007, p, 72, Breidert, C., 2006, p. 49) "This is due to the fact that the observation of a choice out of an evoked set only contains information about the chosen product and not about the remaining products." (Breidert, C., 2006, p. 49)
- Only a limited number of product features or attributes can be addressed with Choice Based Conjoint Measurement, because of an increasing complexity of the interview. (Sattler, H., 2006, pp. 20, 21)
- Due to limited information on a respondents´ level price-response functions etc. it can only be determined on an aggregated level of the overall sample. (Gieseking, T., 2009, p. 65)

4.4.2.1.4 Adaptive Choice Based Conjoint Measurement

In 2003 Johnson, Huber and Bacon presented Adaptive Choice Based Conjoint Measurement as a new variation within the family of Adaptive Choice Based Conjoint Measurement which was optimised by Johnson and Orme in 2007. The Adaptive Choice Based Conjoint Measurement approach can be seen as a combination of Adaptive and Choice Based Conjoint Analysis. (Herrmann, A., Huber, F., 2008, p. 177) Within the adaptive part of the survey the choice tasks are designed during the interview based on previous answers. The major benefit is that this proceeding reduces the size of the interview, because the interview focuses on the key tasks (Poynter, R., 2010, p. 324)

"The objectives of the Adaptive Choice Based Conjoint Measurement interview are as follows:

- Provide a stimulating experience that will encourage more engagement in the interview than conventional Choice Based Conjoint Measurement questionnaires.
- Mimic actual shopping experiences, which may involve non-compensatory as well as compensatory behavior.
- Screen a wide variety of product concepts, but focus on a subset of most interest to the respondent.
- Provide more information with which to estimate individual part-worths than is obtainable from conventional CBC analysis." (Sawtooth Software, 2009, p. 3)

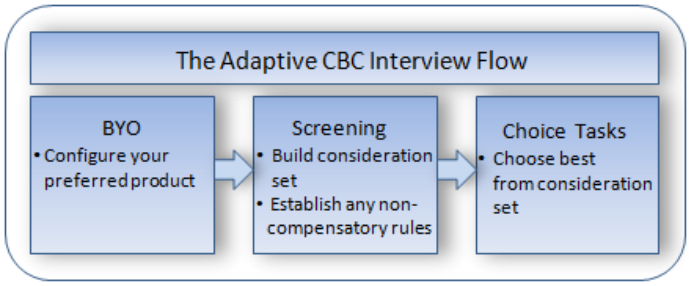


Figure 58: Interview flow of Adaptive Choice Based Conjoint Measurement

(Sawtooth Software, 2009, p. 10)

In a first step the respondents configure their preferred product via a Build Your Own (BYO) question. Based on the preferred product a set of similar products will be created for the respondent to evaluate in the Screening section. Then the respondents point out which of these products they would consider. Finally, respondents make a final product selection among products screened into their consideration set. This is realised by a Choice Task section. (Sawtooth Software, 2009, p. 10)

Advantages of Adaptive Choice Based Conjoint Measurement:

- Participating respondents report that Adaptive Choice Based Conjoint Measurement is an overall better interviewing experience (with a higher satisfaction and interest in the survey) than Choice Based Conjoint Measurement (Sawtooth Software, 2009, p. 18, Orme, B., Johnson, R., Otter, T., 2008, p. 26)
- Adaptive Choice Based Conjoint Measurement is best applied for conjoint-type issues in which five attributes or more are included (Sawtooth Software, 2009, p. 2, Orme, B., Johnson, R., Otter, T., 2008, p. 35)

Disadvantages/Limitations of Adaptive Choice Based Conjoint Measurement:

- It is assumed that studies with few attributes would not benefit from Adaptive Choice Based Conjoint Measurement approach. (Sawtooth Software, 2009, p. 2)
- Today it seems that it is not clear whether Adaptive Choice Based Conjoint Measurement generally works better than other conjoint/choice methods regarding price-response issues or compared to Choice Based Conjoint Measurement. (Chapman, C., et. al., 2009, p. 8, Sawtooth Software, 2009, p. 20)

4.5 Conclusions

Today, especially regarding pricing issues, indirect surveys like Conjoint Measurement are the most frequently used approaches. (Orme, B., 2009, Voelckner, F., Sattler, H., Teichert, T., 2008, Sattler, H., Hartmann, A., 2008) As a cost and time saving alternative, direct survey methods like Price Sensitivity Meter can be used concerning pricing questions. But to determine also price-response functions, the extension of the Price Sensitivity Meter by Newton, Miller and Smith should be taken into consideration.

The following figure summarises the pros and cons of the previous discussed research approaches:

	Surveys			Observations	
	Expert judgements	**Direct surveys**	**Indirect surveys**	**Experiments**	**Market data**
Validity	medium	low/ medium	high	internal validity: high external validity: questionable	high
Reliability	medium/ high	unsure	high	medium/ high	low
Cost	very low	low/ medium	medium/ high	high	depending on availability and access
Methodological complexity	low/ medium	low/ medium	high	high	medium
Applicability for new products	yes	for familiar products good for innovations questionable	questionable regarding innovations	yes	no
Applicability for established products	yes	yes	yes	yes	yes
Total evaluation	applicable	limited applicability	highly applicable	applicable	limited applicability

Figure 59: Applicability of research methods to determine price-response functions

(Own illustration, according to: Simon, H., Fassnacht, M., 2009, p. 142 and Meffert, Burmann, Kirchgeorg, 2008, p. 543)

Regarding pricing issues, in particular, the research approach of Newton, Miller and Smith (Extended Price Sensitivity Meter) should be analysed (tested) in respect of its applicability within commercial practise.

From a theoretical standpoint, it shows advantages concerning cost and time effectiveness, but it has not been analysed enough in terms of applicability. The authors of the extension to the traditional Price Sensitivity Meter argue that more research is needed on the adjustments to stated intention for new products. (Newton, D., Miller, J., Smith, P., 1993)

5 Methodology

This chapter gives an overview regarding the methodological context of the empirical part of this thesis.

An introduction to the applied research approaches will be presented first, in order to illustrate the theoretical background and the motives for the chosen methods. Secondly, a discussion of the applied research approaches and a presentation of the qualitative hypothesis will follow.

After this methodology section, an in-deep statistical analysis of the findings will be presented within the following chapter.

5.1 Introduction and the need for an “appropriate” methodology

In literature, several methods to measure willingness to pay have been proposed. However, there is still little knowledge about their reliability in practice and from theory today none of the research approaches appears to show significant advantages. Empirical studies have produced mixed results.

Like discussed before, with regard to pricing issues and the determination of willingness to pay several research approaches can be used. Especially surveys are discussed as commonly used research methods to gathering market information. (Stokes, D., Wilson, N., 2010, p. 147, Wiid, J., Diggines, C., 2009, p. 106, Rao, V., 2009, p. 40)

Surveys can be generally differentiated into direct and indirect surveys. (Siems, F., 2009, p. 105) Simon, Fassnacht (2009) and Meffert, Burmann,

Kirchgeorg (2008) analysed either the theoretical or the practical applicability of different research methods. In literature, direct surveys are evaluated with limited applicability in pricing research. In contrast indirect surveys are seen as highly applicable.

	Research method	
	Direct surveys	Indirect surveys
Applicability	limited applicability	highly applicable

Figure 60: Applicability of research methods in pricing

(Own illustration)

On the basis of theoretical assumptions and individual empiric studies, indirect survey techniques are considered to have superiority in validity over simpler and less expensive techniques like direct surveys. (Sattler, H., Hensel-Boerner, S., 2007, p. 68) For instance in reference to the validity Woratschek (2001) remarks that in the case of direct research methods the respondents may be focused too much on price and other attributes (especially at services) take a back seat.

Concerning pricing research, the indirect survey method Conjoint Measurement is most frequently used. (Simon, H., Fassnacht, M., 2009, p. 116, Green, P., Krieger, A., Wind, Y., 2001, p. 3) Orme (2009) pointed out that Conjoint Measurement (and for pricing research the Choice Based Conjoint Measurement) has become one of the most widely used tools in marketing research with useful results. Especially with regard to determining price-response functions and a customers' willingness to pay of single product features, the results of conjoint analysis are of special importance. (Homburg, C., Krohmer, H., 2009, p. 396)

Due to the economic situation, companies in almost every industry segment are more and more forced to reduce costs. Regarding this one effect is a reduction of the companies´ marketing research budgets. For instance in October 2012 the British Institute of Practitioners in Advertising (IPA) reports in their IPA Bellwether Survey that 23 per cent of companies are likely to reduce their marketing expenditures.

Thus, over the past years direct surveys like the Price Sensitivity Meter have become popular research methods in commercial practice. (Simon, H., Fassnacht, M., 2009, p. 174, Homburg, C., Krohmer, H., 2009, p. 667) Simon and Fassnacht (2009) describe the main advantage of this research method with its easy (and cost-effective) handling to conducting, analysing and illustrating the data. But, with the Price Sensitivity Meter method it is not possible to gather price-response functions in order to determine profit optimised market prices. (Simon, H., Fassnacht, M., 2009, p. 176)

With their research approach, Miller, Newton and Smith (1993) presented an extension to the traditional van Westendorp model. With the addition of two purchase probability questions, it is possible to plot trial and revenue curves. (Weiner, J., 2002, p. 113) Due to cost-savings, in commercial practise this research method is becoming more and more popular in pricing research. Nowadays it is applied by some well-known market research agencies worldwide. But, this method is still not in the focus of scientific papers.

Today, in the literature no comparison of the Extended Price Sensitivity Meter with the Choice Based Conjoint Measurement method can be found. The

main goal of this thesis is to diminish this academic void. Therefore, the Choice Based Conjoint Measurement and the Extended Price Sensitivity Meter were chosen for this direct comparison of an indirect and direct survey method to conduct willingness to pay.

The idea was to analyse the applicability of a cost-effective and simple research technique with regard to pricing issues in commercial practise. It should be discussed whether a low cost approach like the Extended Price Sensitivity Meter could be an alternative method to deliver useful results concerning the determination of price-response functions (as the major input to set optimal market prices). If yes, an applicability of this research method would helpful for marketers in commercial practise to save cost, besides the feasibility to conduct useful and reliable pricing information.

The empirical study in this thesis was realised in the context of pricing research within the aftermarket of the automotive industry.

5.2 Applied Research Approaches

A common research method concerning market oriented pricing within the automotive industry is Conjoint Measurement. (Lauszus, D., Hofer, M., in: Ebel, B., Hofer, M., 2004, p. 213)

Especially with regard to determining market positioning, market entry pricing, price optimisations or product development Conjoint Measurement is used. (Lauszus, D., Hofer, M., in: Ebel, B., Hofer, M., 2004, p. 212) But as described in the previous chapters Conjoint Measurement is a complex as

well as a time- and cost-intensive research method to determine willingness to pay.

Another research approach which is used for pricing matters (also in the automotive industry) is the direct questioning method Price Sensitivity Meter. (Ebel, B., Hofer, M., 2004, p. 246) In commercial practice this method is commonly used by diverse market research institutes. (Berekoven, L., Eckert, W., Ellenrieder, P., 2009, p. 277, Diller, H., 2008, p. 188, Voelckner, F., 2006, p. 56) For instance worldwide acting research companies like Harris Interactive, TNS Infratest, Ipsos S.A. or the GfK Group apply the Price Sensitivity Meter method regarding pricing research. (Source: Corresponding websites of the companies)

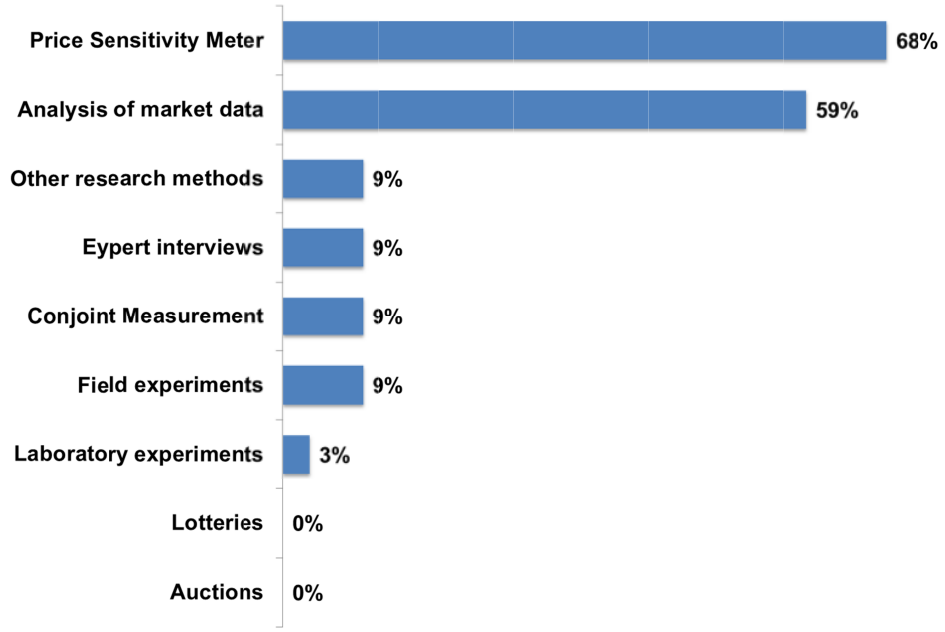


Figure 61: Pricing research methods in commercial practise

(Own illustration, according to: Hofstetter, R., Miller, K., 2009, p. 56)

Hofstetter and Miller (2009) analysed Swiss enterprises with regard to their research practise concerning pricing issues. Nearly 70 per cent of the companies used Price Sensitivity Meter to elaborate willingness to pay and

only 9 per cent the indirect approach Conjoint Measurement. From a practical standpoint this highlights the importance of the Price Sensitivity Meter as a direct research method in commercial practise.

As discussed before in this thesis Price Sensitivity Meter as a direct research approach delivers different price points and price ranges for a marketer to set a profit optimised price for a product or service. But with this method a price-demand curve, which is essential for a profit optimal pricing, cannot be derived. (Xu, J., 2005, p. 181) However the determination of a price-demand function is possible with the extension to the traditional Price Sensitivity Meter by Miller, Newton and Smith (1993). (Weiner, J., 2001, p. 113)

According to this, concerning the determination of a maximum willingness to pay an alternative and cost-effective method to Conjoint Measurement like the Extended Price Sensitivity Meter by Miller, Newton and Smith should be discussed, for instance in a direct (empirical) comparison with the established Conjoint Measurement approach.

In literature only few comparisons of direct and indirect surveys can be found. “As prior pricing studies focus on the indirect approach (e.g. Green and Krieger 1996, Hanson and Martin 1990, Jedidi and Zhang 2002, Venkatesh and Mahajan 1993); there is little research on the validity and appropriate design for the direct approach.” (Hoftstetter, R., Miller, M., 2009, p. 5) Moreover there is also a lack of studies in literature which analyse the overall quality of Price Sensitivity Meter concerning theoretical adoptions. (Reinecke, S., Muehlmeier, S., Fischer, P, 2009, p. 99, Mueller, H., 2008, p. 16)

Today, in the literature no comparison of the Extended Price Sensitivity Meter with the Choice Based Conjoint Measurement method (from a theoretical and a practical point of view) can be found. Thus the main goal of this thesis is to diminish this academic void (as a first step).

From a theoretical standpoint the Extended Price Sensitivity Meter (as an example for direct research approaches) was chosen for the empirical part in this thesis because of its capability to derive price-demand functions. Furthermore today this research method is not in the focus of scientific publications.

From a practical standpoint the two research approaches were chosen regarding its importance and use within commercial practice. As discussed before, Choice Based Conjoint Measurement is one of the most frequently used research techniques nowadays concerning pricing issues. Another highly used research approach in pricing is the Price Sensitivity Meter by van Westendorp. (Mueller, H., 2008, p. 16) But in commercial practice marketers need to understand the correlation between demand and price. (Chrzan, K., 2011, p. 5) This can be realised by the extension to the traditional Price Sensitivity Meter by Miller, Newton and Smith.

To build a bridge from theory to commercial practice in this thesis the well-established Choice Based Conjoint Measurement was compared directly (in one empirical study) with the extended version of the Price Sensitivity Meter.

Regarding contribution to knowledge, this empirical comparison should reflect two different aspects:

- From a theoretical (scientific) standpoint, no comparison of these two research techniques can be found in literature. So in this thesis a direct comparison of the two research approaches will be presented for the first time (including a statistical analysis of the results).
- From a practical point of view, the comparison should deliver marketers useful information on the practicality of the Extended Price Sensitivity Meter regarding pricing issues in commercial practise. Marketers should receive a first overview how this research method works concerning the determination of willingness to pay within a B2B environment, especially within the automotive industry.

5.3 Conclusions

To sum up, we can say that the automotive industry is one of the most important industry sectors worldwide (please see chapter 2). Moreover, especially within the automotive industry the AfterSales division is a very important instrument to secure profits with on average more than 50% of the total earnings.

As discussed in a previous chapter, price is one of the main profit drivers. Based on this, pricing decisions in the AfterSales arena are of vital importance for the total business case of an automobile company.

Because of this strategic importance the empirical test in this thesis was placed within the context of the automotive AfterSales arena.

In respect of pricing research in the automotive industry today Choice Based Conjoint Measurement and Price Sensitivity Meter are commonly used approaches. Due to its limitation regarding the determination of price response functions, the research approach Price Sensitivity Meter will not be used within this thesis. Instead the Extended Price Sensitivity Meter by Miller, Newton and Smith will be applied, parallel to the Choice Based Conjoint approach with which price response functions can be derived.

But what was the reason for a direct comparison of Conjoint Measurement and the Extended Price Sensitivity Meter? As pointed out before there is a lack of studies in literature with regard to comparisons between Conjoint Measurement and the Extended Price Sensitivity Meter.

Today this particular research approach is still not in the focus of scientists. But in commercial practice a lot of marketers and research specialists use this method to gather valuable market data in respect of pricing issues. The marketers appreciate the practicability (easy handling) and the cost-effectiveness of the Extended Price Sensitivity Meter especially compared to the well-known but cost intensive Conjoint Measurement.

The empirical analysis in this thesis should help to get a (first) impression concerning the usefulness of that simple and cost-effective research approach in pricing research.

5.4 Qualitative hypotheses

In this paragraph the qualitative hypotheses concerning the empirical test within this thesis will be illustrated. First, the term “Qualitative hypothesis” and its relevance in research will be discussed, followed by the respective qualitative hypotheses within this thesis.

“Quantitative and qualitative approaches to research provide valuable contributions to the development of new knowledge.” (Fain, J. A., 2013, p. 115) Quantitative research measures variables to test hypothesised relationships in more controlled environments. (Supino, P., Borer, J., 2012, p. 10; Ridenour, C., Newman, I., 2008, p. 1) Measurement and statistics are central to quantitative research. (Hoy, W., 2010, p. 1)

But not all content analysis result in counting because sometimes a qualitative assessment of the gathered data is most appropriate. (Rubin, A., Babbbie, E., 2012, p. 245)

“Qualitative research is research that involves analysing and interpreting texts and interviews in order to discover meaningful patterns descriptive of a particular phenomenon.” (Auerbach, C. F., Silverstein, L., 2003, p. 4)

Cresswell (2009) describes qualitative research as the determination of research questions instead of objectives (i.e. specific goals for the research) or hypotheses (i.e. predictions that involve variables and statistical tests) like in quantitative research.

Fain (2013) specifies qualitative research studies as explanatory using research methods like in-depth interviews, observation or focus groups. Qualitative hypothesis are usually used within the context of qualitative research. In the context of this research the hypotheses are qualitative in that the study takes an essentially case study approach to generate in-depth pricing data within a specific industry, and the study does not automatically assume that these results are more widely applicable.

Due to a limitation in reference data and a lack of research concerning a direct comparison of the Extended Price Sensitivity Meter in this thesis a qualitative research approach including the use of qualitative hypothesis will be applied regarding contribution to knowledge in pricing research, using the case study example of the automotive industry.

After this short overview regarding qualitative research the respective qualitative hypothesis will follow which will be analysed in this thesis.

	Qualitative hypothesis	Measurement	Measured value
1	Concerning the Extended Price Sensitivity Meter as a direct survey method, customers are focused too much on price (pre-biased)	Willingness to pay	Determined willingness to pay is significant lower than for Choice Based Conjoint Measurement (10% lower)
2	The Extended Price Sensitivity Meter is appropriate for innovative product concepts (conclusion of the authors Miller, Newton & Smith)	Willingness to pay	Determined willingness to pay is on the same level as for the Choice Based Conjoint Measurement
3	Regarding willingness to pay the Extended Price Sensitivity Meter delivers identical price points like the Choice Based Conjoint Measurement	Maximum willingness to pay	The price points concerning maximum willingness to pay differs not more than 5% between the two research methods
4	The Extended Price Sensitivity Meter is applicable within the B2B arena with products which are not self-explanatory	Determined price points	Customers are able to state plausible product prices (plausibility check by the results of the Choice Based Conjoint Measurement)
5	The Extended Price Sensitivity Meter only works with respondents who do not have any preconceived price perception (limitation by the authors Miller, Newton & Smith)	Maximum willingness to pay at respondents who are aware about market prices (they already own a bus trailer)	Determined price points from the Extended Price Sensitivity Meter are reasonable with regard to the current market price level

Table 2: Qualitative hypotheses applied to examples in automotive industry

Qualitative hypothesis 1 deals with the conclusion from literature that for direct surveys customers are focused too much on price (pre-biased). For example Simon, Fassnacht (2009), Berenkoven (2009), Breidert, Hahsler, Reutterer (2006), or Voelckner (2006) confirm this theoretical effect (strategic and hypothetical bias) as a major point of criticism concerning direct surveys.

With qualitative hypothesis 2, the authors' conclusion that the Extended Price Sensitivity Meter is appropriate for innovative product concepts should be examined. In the original article Miller, Newton and Smith (1993) pointed out the practicability of their new method in early stages of development, before the parameters of the product are defined.

With qualitative hypothesis 3 the applicability of the Extended Price Sensitivity Meter to determine willingness to pay should be tested, as a worthwhile alternative method to the established Choice Based Conjoint

Measurement approach. Like discussed, the Conjoint Measurement is the most frequently used research approach concerning pricing issues. But this is a time-consuming and cost-intensive research method. Due to limited market research budgets, in commercial practise direct surveys like the Price Sensitivity Meter by van Westendorp or the extension to this method by Miller, Newton and Smith became more popular. (Hofstetter, R., Miller, K., 2009, p. 33)

The idea of qualitative hypothesis 4 is to find out whether the Extended Price Sensitivity Meter is a practicable research method in commercial practise, especially within the B2B arena concerning products which are not self-explanatory.

In qualitative hypothesis 5 the conclusion of Miller, Newton and Smith concerning the applicability of the Extended Price Sensitivity Meter only with respondents who do not have any preconceived price perception will be analysed. The authors mention this as a limitation of their approach.

If the gathered market data by the Extended Price Sensitivity Meter would be likewise as useful as the results of the Conjoint Measurement the direct survey method could be a good and cost-saving alternative; especially within the B2B market.

This would help market researchers and marketers in commercial practice to save time and money in respect of pricing research.

6 Empirical test – General set-up

This chapter presents the general set-up of the empirical study in preparation for the findings of the study within the next chapter.

First a short discussion about the applied experimental design will be presented, followed by a description of the sample size and its structure.

Then the statistical robustness of the gathered data will be evaluated according to common statistical criteria.

After this chapter, the results of both applied research approaches will be analysed in detail.

6.1 Experimental design

The empirical study within this thesis was conducted by personal computer assisted interviews within the German, French and Spanish automotive market.

The used data was provided by the well-known Daimler AG, where the AfterSales division of Daimler Buses initiated a market study in 2012 in order to derive market information. The objective was to find out the willingness to pay of vehicle owners concerning a bus specific trailer product concept by the use of two different research approaches.

In total, sixty customers were asked in computer assisted personal interviews with regard to the pricing of automotive accessories. These interviews and

the data processing in a usable data type were carried out by a German market research institute.

After receiving the data-set from the institute, the collected raw data was prepared and analysed in a direct comparison of the two applied market research method by the author of this thesis.

Excurse:

“The most popular technique for gathering primary data is survey research, in which a researcher interacts with people to obtain facts, opinions and attitudes.” (Lamb, C., Hair, J., McDaniel, C., 2009, p. 246) In primary research, surveys are most frequently used for gathering information. (Stokes, D., Wilson, N., 2010, p. 147, Wiid, J., Diggines, C., 2009, p. 106, Fantapié Altobelli, C., 2007, p. 35, Eckey, H.-F., et.al., 2008, p. 18) Concerning primary research the data is gathered for the first time, in contrast to secondary research where already existing information is used. (Kuss, A., 2012, p. 100)

“Survey information is obtained from respondents through communication in several alternative media modes.” (Albaum, G., Smith, S., 2009, p. 181) Generally surveys can be split up into the four categories personal, telephone, written and online interviews. (Albaum, G., Smith, S., 2009, p. 181)

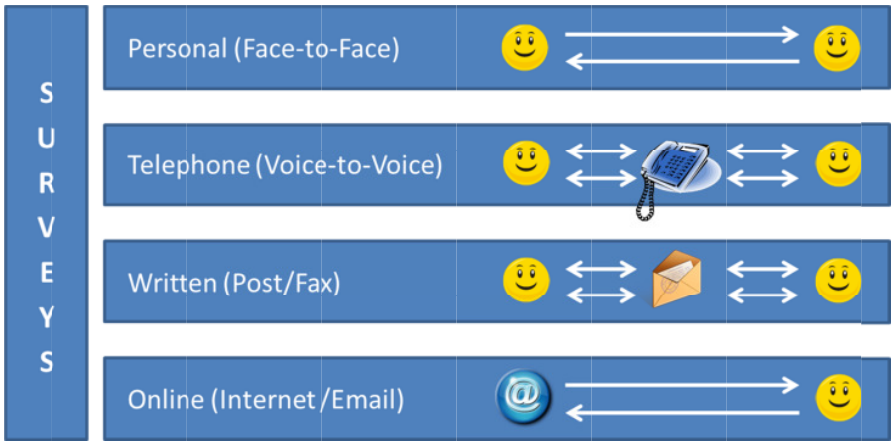


Figure 62: Survey Techniques

(Own illustration, according to: Broda, S., 2006, p. 30)

Personal interviews consist of an interviewer asking a respondent questions in a face-to-face situation. (Albaum, G., Smith, S., 2009, p. 182) "Face-to-Face interviews are the most intensive type of survey, in terms of time and cost." (Abbott, M., McKinney, J., 2013, p. 206) This interview form gives the possibility to derive more information because a personal interview can be longer than other modes. Moreover it provides higher flexibility in respect of adapting and interpreting questions as a situation requires. (Albaum, G., Smith, S., 2009, p. 182) The main advantage of face-to-face interviews is the possibility for the interviewer to dig deeper if a respondent seem to misunderstand the meaning of a question. (Bernard, R., 2011, p. 190) "Where questions are complex, personal interviews are often the best method." (Zimmerman, A., Blythe, J., 2013, p. 97)

For several years telephone interviews have been the main contact method in commercial research. The quality of the gathered data should be comparable to personal interviews. (Zikmund, W., Barby, B., 2007, p. 214)

Telephone interviews are less cost-intensive than with an estimated 25% of face-to-face interviews. (Zimmerman, A., Blythe, J., 2013, p. 98, Zikmund, W., Barby, B., 2007, p. 214)

In Europe telephone interviews are mainly used in B2B markets to reach a large number of respondents quickly and directly. (Zimmerman, A., Blythe, J., 2013, p. 98, Brassington, F., Pettitt, S., 2006, p. 252) This interview type is especially useful for usage and purchase surveys, where market size, trends, customer satisfaction or market shares should be assessed. For instance Kwik Fit Exhaust, an automotive workshop chain, telephones its customers to ask for their satisfaction concerning their recent purchase. (Brassington, F., Pettitt, S., 2006, p. 252)

But telephone interviews are not appropriate for product concept tests, print advertising etc. because visual aids cannot be used. (Zikmund, W., Barby, B., 2007, p. 217) “The interaction between the interviewer and interviewee is very limited: the interviewer can only monitor verbal cues.” (Stines, A., 2011, p. 54)

The very traditional way to conduct market data is the paper and pencil test or written survey. Usually written surveys are sent by mail / by post. But the return rate is often problematic. (Goodwin, J., 2009, p. 474) The costs are lower than for telephone or personal interviews, because interviewers are not required. But there is a major disadvantage, in the case of questions no one is available to answer. (Jackson, S., 2011, p. 114)

Another limitation of written surveys is the low response rate. Normally a single mailing produces response rates of 25% to 30% which is much lower than for telephone or personal interviews. (Jackson, S., 2011, p. 114)

Online interviews are the cheapest market research approach. Today the internet is widely used for surveys with the major advantage of speed and cost. (Zimmerman, A., Blythe, J., 2013, p. 98) But the main disadvantages of online surveys are the low response-rate and the lack of control over who really responds. Often managers receive an online questionnaire who let their secretaries or administrative assistants complete it. (Zimmerman, A., Blythe, J., 2013, p. 98)

	Mail	Telephone	Personal	Online
Flexibility	Poor	Good	Excellent	Good
Quantity of data that can be collected	Good	Fair	Excellent	Good
Control of interviewer effects	Excellent	Fair	Poor	Fair
Control of sample	Fair	Excellent	Good	Excellent
Speed of data collection	Poor	Excellent	Good	Excellent
Response rate	Poor	Poor	Good	Good
Cost	Good	Fair	Poor	Excellent

Figure 63: Strengths and Weaknesses of Contact Methods

(Kotler, P., Armstrong, G., 2010, p. 135)

Kotler and Armstrong (2010) summarise the advantages and disadvantages of the different survey or contact methods. From this overview we can see that in terms of data quality (which is condensed by “Flexibility”, “Quantity of data that can be collected” and “Control of Sample”) the personal interviews are superior. In terms of costs and speed usually telephone and online interviews are predominant.

As discussed before in respect of pricing research, especially for product concepts or complex issues, personal interviews are commonly used within commercial practise nowadays. Even the possibility that the interviewers can answer comprehensive questions or that they may enquire if something is unclear should lead to better results. Therefore in this thesis this research method of personal interviews was used to determine pricing information for product test.

6.1.1 Sample size and data collection

On behalf of the bus division of the Daimler AG, the empirical survey was conducted by computer assisted personal interviews in Germany, France and Spain within the bus and coach business.

In total more than 280 customers were asked with regard to aftersales topics. The field work was done by an external market research institute. For the empirical analysis in this thesis, the gathered data set was provided by the Daimler AG.

Based on Daimler internal figures, the distribution of the sample was oriented to the vehicle population of the brands Mercedes-Benz and Setra in the participating countries (city buses, intercity buses and coaches).

Upfront the pricing section of the study the respondents had to state if they are interested purchasing a trailer for their buses or coaches within the next 2-3 years. The goal was to identify those customers who are really interested in purchasing a trailer product because they should be aware of the current

market price level. Therefore reasonable price information could be assumed which is necessary with regard to the test of qualitative hypothesis 5 “The Extended Price Sensitivity Meter only works with respondents who do not have any preconceived price perception (limitation by the authors Miller, Newton & Smith)”.

As a consequence of this pre-selection in total 60 customers could be asked in respect of their ideas and their willingness to pay concerning trailer product concepts.

Today, detailed market information about the population of bus specific trailers is not available. The local regulatory authorities like the German Federal Office for Motor Vehicles register and publish only the total volume of trailers (with the majority in truck trailers). Therefore the sample was oriented to the usage of bus trailers where the majority of users belong to the interurban and coach segment.

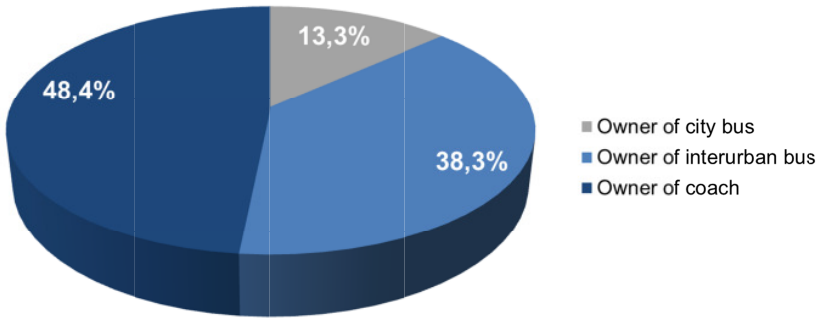


Figure 64: Sample structure of pricing section

(Own illustration)

Expert interviews upfront the thesis showed that trailers for buses and coaches are mainly used with interurban buses and coaches (i.e. to transport luggage, skiers or bicycles). More and more city transport companies also use trailers to carry bicycles. (Ostthueringer Newspapers, May 2013, New Westphalia Newspapers, May 2013)

Of the sample 86.7% of all respondents are owners of coaches or interurban buses and 13.3% own city buses. In respect of the vehicle usage with a higher of interurban buses or coaches owners, the sample structure could be considered as representative for the total market of trailer users.

The empirical survey was conducted by computer assisted personal interviews in Germany, France and Spain. As described before in total 60 respondents were asked about their ideas concerning trailer product concepts. The sample consists of decision makers regarding the purchase of vehicles and/or accessories (i.e. owner, workshop manager, head of repair service, etc.).

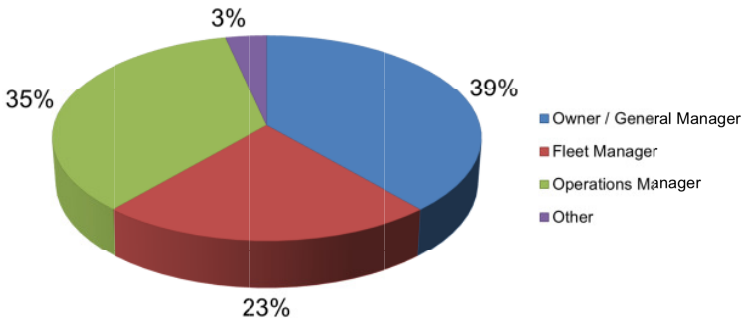


Figure 65: Distribution of respondents concerning business position empirical study

(Own illustration)

Of the respondents nearly 74% represent the general manager/owner of the workshop or the operations manager; another 23% were fleet managers.

As already described, respondents in three different countries were asked regarding their willingness to pay. The following figure illustrates the sample structure in respect of interviews per country.

Figure 66: Sample structure (number of interviews per country)

(Own illustration)

In total sixty customers could be asked with regard to pricing issues in this empirical test. Because of the small sample sizes in France and Spain, an analysis on a country specific level is not reasonable (from a statistical point of view). Hence, in the following the results will be described with regard to the total sample over all three countries.

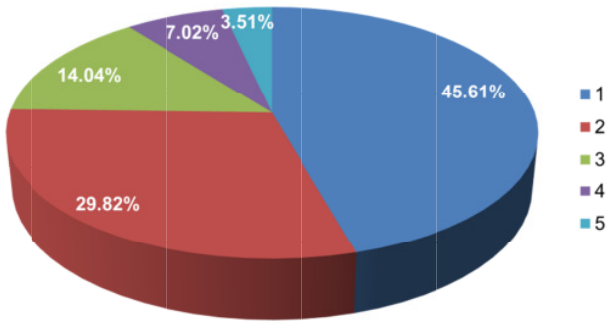


Figure 67: Share of bus trailers at respondents

(Own illustration)

The previous figure displays the number of bus trailers at the interviewed customers. From the results we can see that more than 75% of the respondents currently own one or two trailers. Another 25% have three or more trailers in their vehicle park. Only three respondents currently do not own a trailer.

The queried products are already known trailer products within the market and no new product developments. An intense desk research and personal interviews displayed that today only a small number of trailer manufacturers also offer product variants for buses and coaches (i.e. Humbaur, Harbeck). Please see the corresponding websites.

Preliminary to the thesis expert interviews with trailer manufacturers and bus trailer owners showed that today in commercial practice mainly standardised bus trailers with a sandwich panel body are in use.

Figure 68: Standard trailer for buses and coaches

(Source: Franz Harbeck GmbH, 2013)

The interviewed bus trailer owners remarked that the standard body is beneficial in respect of the shipping volume but has also a major

disadvantage with increased fuel consumption due to its suboptimal aerodynamics.

According to this, besides the standard trailer version a special fuel consumption (aerodynamic) optimised version was tested concerning the customer´s demand and their willingness to pay. Upfront interviewed trailer owners remarked that the fuel consumption of the vehicle increases while using a trailer (mainly due to aerodynamics). Moreover the respondents stated that a trailer with an optimised aerodynamic form may be beneficial but its purchase price is crucial.

Upfront Daimler-internal market analyses showed that today an aerodynamic optimised trailer for buses and coaches does not exist in the market. Only few manufacturers like the Humbaur GmbH (Germany) offer such a trailer version for passenger cars. In consequence of this knowledge Daimler Buses decided to investigate the customers' interest and willingness to pay with regard to an aerodynamic optimised bus trailer.

Figure 69: Aerodynamic optimised trailer

(Source: Humbaur GmbH, 2013)

The idea in this study was to test a well-established product with a new product regarding pricing issues, i.e. willingness to pay.

In the following a brief definition of statistical quality criteria will be given which is used afterwards in the results chapter.

6.1.2 Selected Research techniques

In respect of the research of willingness to pay within this study two different research techniques were chosen:

- Extended Price-Sensitivity Measurement (by Miller, Newton and Smith)
- Choice Based Conjoint Analysis

Both methods have been already described in detail within chapter 4. Therefore in the following, the focus is on the procedure of the empirical survey.

6.1.2.1 Extended Price-Sensitivity Measurement

Regarding the empirical part of the thesis the respondents were first asked to state their price preferences regarding two trailer product concepts on behalf of the Extended Price Sensitivity Meter methodology by Miller, Newton and Smith.

The market data was collected by computer assisted personal interviews. Subsequently the data was transformed to the statistical software SPSS (Statistical Package for Social Sciences) of IBM.

IBM SPSS Statistics is comprehensive and powerful in respect of statistical data analysis which is widely used by market researchers. (Brosius, F., 2011, p. 1, Sarstedt, M., Mooi, E., 2011, p. 92) Since the 1990s SPSS represents the most frequently used statistic software within market research and data analysis with more than 3 million users. (Martens, J., 2003, p. 2) Within SPSS the results of the Extended Price Sensitivity Meter could be analysed.

To make any pricing decision within the query for the customers easier these products including the major features were described upfront.

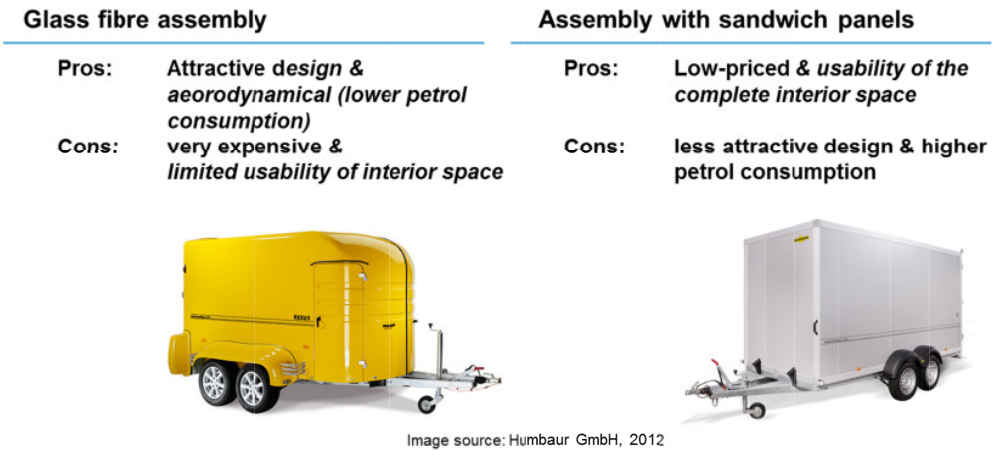


Figure 70: Queried products in EPSM section

(Own illustration)

According to Miller, Newton and Smith the respondents first had to answer four Price Sensitivity Meter PSM questions for these two different products:

Next, I will show you the description of a bus trailer. Please read the description carefully.

- *Glass-fibre assembly, aerodynamic optimised (height and profile)*
  Assumption: Aerodynamic profile results in 5% fuel saving
- *Pasting film according to the design of the towing vehicle*
- *Safety package (consisting of air brakes, air suspension, Electronic Brake System)*
- *DIN drawbar eye (with max. 250 kg bearing load, 3.5t towing capacity)*
- *Rear-view backup camera*
- *Without multifunctional interior finishing*

If you please think about the cost of such a trailer:

- *Which price would you consider as inexpensive for this product?*
- *And which price seems to be expensive but yet acceptable?*
- *Which price seems to be too high, that a purchase would be out of question?*
- *And which price is too low, that you would doubt the quality of the trailer?*

Figure 71: Screenshot example of Price Sensitivity Meter questions

In order to realise a price demand curve two additional questions were asked, based on the original approach of Miller, Newton and Smith. The questions refer to the customers´ “inexpensive” and “expensive” price point

(examples) and the respondents were asked to state their purchase likelihood on a scale from 1 (definitely not) to 10 (definitely):

- *Assuming the price of the trailer is €15,000. How likely would you buy it?*
- *Assuming the price of the trailer is €20,000. How likely would you buy it?*

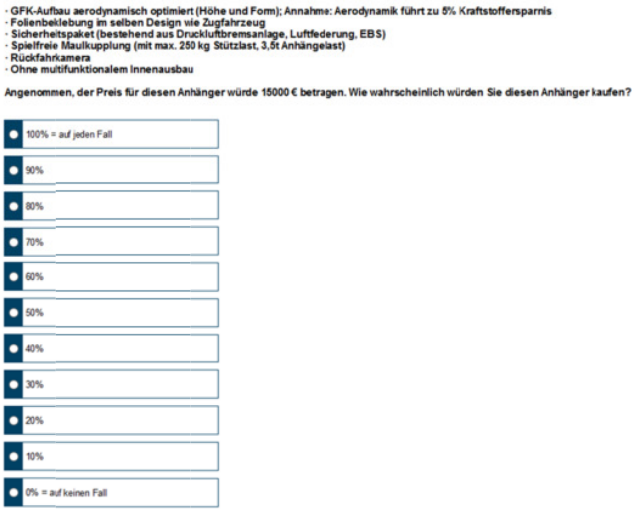


Figure 72: Screenshot Extended Price Sensitivity Meter questions

After finalising the Extended Price Sensitivity Meter part in a second step the respondents were asked to state their preferences in a conjoint section.

6.1.2.2 Choice Based Conjoint Measurement

Within the conjoint part of the survey the identical products as for the Extended Price Sensitivity Meter section were asked.

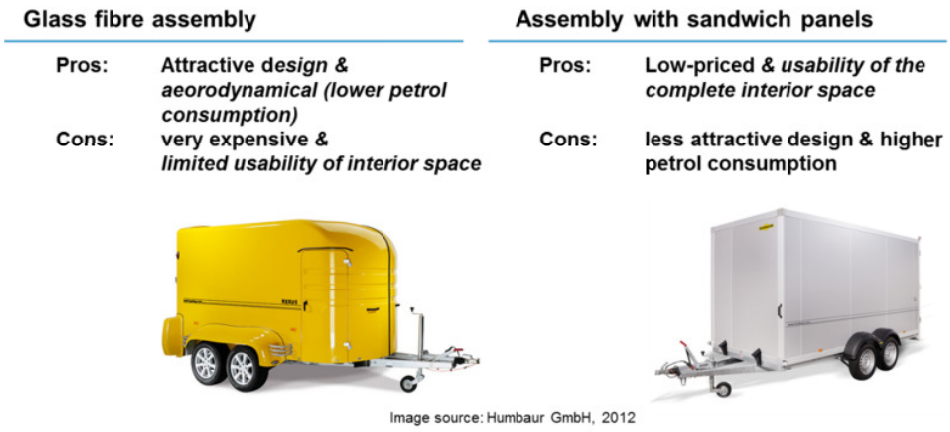


Figure 73: Queried products in conjoint section

(Own illustration)

Regarding the Conjoint Measurement part upfront the queried products were described with a number of attributes and the corresponding levels.

Attribute: Brake	Overrunning brakes
	Compressed air brake
Attribute: Trailer coupling	Trailer hitch ball coupling
	Bar coupling
	DIN drawbar eye
Attribute: Body	Glass fibre assembly
	Assembly with sandwich panels
Attribute: Price	20% under market mean value
	10% under market mean value
	Market mean value
	10% above market mean value
	20% above market mean value

Figure 74: CBC – Attributes and levels

(Own illustration)

The previous figure shows the Choice Based Conjoint Measurement set-up with four attributes and the corresponding levels per attribute. The selected attributes as well as the levels were discussed and defined upfront by automotive experts based on their market experience.

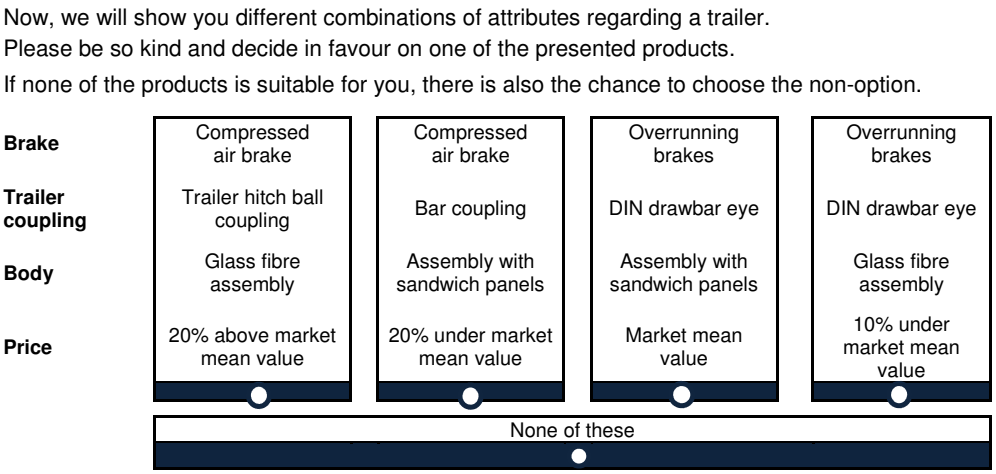


Figure 75: Example CBC Choice Set

(Own illustration)

Within the conjoint section each respondent went through 18 choice sets in order to state their preferences regarding the presented product configurations.

The gathered data of the Choice Based Conjoint Measurement (CBC) was processed to the conjoint software package “CBC System for Choice Based Conjoint Analysis” by Sawtooth Software Inc. which is one of the world’s leading software products. (Sawtooth Software, 2013)

“Sawtooth Software was the fourth most-used software (after SPSS, Excel, and SAS) among respondents to a recent survey of 1,500 registered users of the American Marketing Association's website (source: *Marketing News*, Feb 1, 2005, p. 55).” (Sawtooth Software, 2013)

For the Choice Based Conjoint Measurement part the Complete Enumeration methodology was used. “In the complete enumeration method, all the possible solution combinations are enumerated and each one is solved

optimally." (Panneerselvam, R., 2007, p. 17) Sawtooth Software´s CBC product usually uses randomised designs which reflect the fact that respondents are randomly selected to see different variations of the choice sets. (Chrzan, K., Orme, B., 2000, p. 6) Complete enumeration is characterised by attribute levels within choice sets that are duplicated as little as possible which is called "minimal overlap". (Chrzan, K., Orme, B., 2000, p. 6)

Thus the analysis of the gathered data was processed by the use of well-established marketing research software products (i.e. in commercial practise) which should lead to reasonable results.

6.2 Analysing the statistical robustness of the study

In this paragraph the collected data will be analysed by the means of statistical quality criteria. The main goal is to check the statistical robustness of the results which were gathered by the two applied research methodologies.

6.2.1 Introduction

Within literature reliability of estimates is discussed as a statistical quality criterion. Reliability is important because it describes the level of confidence/accuracy by which the gathered result is close to the true result. (Goodwin, C., 2009, p. 134, Heidbrink, M., 2006, p. 42)

Reliability of the results depends on the experimental variance of the measurement error. Reliability increases with a decreasing variance of the measurement error. (Heidbrink, M., 2006, p. 42)

Significance of information means that the gathered results do not occur due to coincidence mechanism but can be traced back to relations which are clearly non-coincidental (more frequently than simply by random chance). (Pepels, W., 2004, p. 297) “Statistical significance only relates to the amount of confidence we have that the findings we obtained were not the product of pure chance.” (Denscombe, M., 2007, p. 266)

Therefore, to evaluate the statistical significance of the results in this thesis the quality criteria of standard error and standard deviation should be taken into consideration.

6.2.2 Test of normality (Kolgomorov-Smirnov)

To test normality of a sample, usually the Kolgomorov-Smirnov test is used. (Basu, A., Sioya, H., Park, C., 2011, p. 23) “This test compares the distribution of values with a perfect normal distribution of the same mean and standard deviation of the set of values. A p-value of <0.05 means that the distribution is significantly different to the required normal distribution and the data fail to satisfy the assumption of normality.” (O´Donoghue, P., 2010, p. 189)

Kolmogorov-Smirnov-Test

Kolmogorov-Smirnov-Z	1,184
Asymptotic Significance (double-sided)	0,145

Figure 76: Kolgomorov-Smirnov Test

(Own illustration)

The previous figure shows the output of the Kolgomorov-Smirnov test. With a score of 0.145, the determined p-value is >0.05 and so the data approve the assumption of normality. This should the basis for the following analysis.

In the following, the results of the analysis with regard to statistical quality criteria (sample size, standard error and standard deviation) will be illustrated.

6.2.3 Sample size

The sample size within an empirical study is a central factor concerning the statistical precision or sampling error with which values can be estimated. (Dattalo, P., 2008, p. 12) In general an increased sample size is associated with decreased sampling error. “The larger the sample, the more likely it is, that the results will validly represent the population.” (Dattalo, P., 2008, p. 12) Ideally, a sample is selected which is representative of a population where the elements portray the specifics of the relevant population. (Dattalo, P., 2008, p. 3)

But sometimes operational limitations like cost, time or the number of respondents available prohibit the use of a large sample. (Rubin, A., Babbie, E., 2012, p. 165, Kuss, A., 2012, p. 61, Matthews, P., 2010, p. 13, Bartlett, J. E., Kotrlik, J., Higgins, C., 2001, p. 49) Therefore with regard to sample size usually the best compromise between cost and statistical accuracy must be taken into consideration. Please see also the following figure.

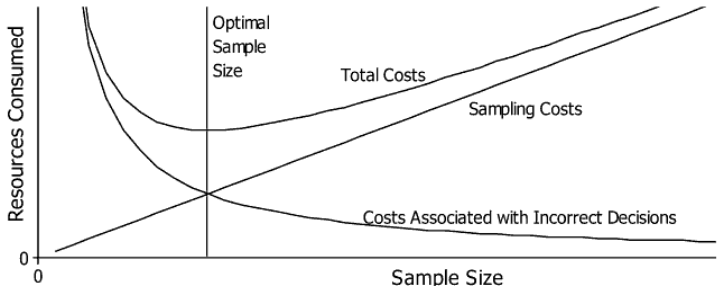


Figure 77: Cost model for resources consumed versus sample size

(Matthews, P., 2010, p. 1)

Regarding random samples Matthews (2010) characterises sample size as an input to the confidence interval half-width calculation. Confidence interval half-width is defined as the precision of the estimate for the population parameter. (Matthews, P., 2010, p. 14) Woolridge (2009) describes confidence interval as a range of values (with a lower and an upper value) for the population parameter.

Kuss (2012) specifies the definition of confidence interval as data regarding a range of values (with lower and upper limit) which includes an estimated value with an assumed probability. In statistics a confidence half-width interval of 95% is state of the art. (Siegel, A., 2011, pp. 220 and 225, Moore, D., 2010, p. 362, Buecker, R., 2003, p. 184, Bartlett, J. E., Kotrlik, J., Higgins, C., 2001, p. 45) This indicates that an estimated value would be in the interval with a probability of 95%. Moore (2009) summarises the confidence level as the success rate of the research method that produces the interval.

Another important factor for the quality of estimations regarding random samples is the margin of error. (Kuss, A., 2012, p. 218) The margin of errors shows the accuracy of the estimation within a sample. “The larger its value,

the less confidence we have in the prediction. Conversely, the smaller its value, the more likely the prediction will be accurate." (Moore, D., 2010, p. 170)

Mwape and Mumba (2012) define the margin of error as the degree of precision between the sample and the whole population. Researchers usually work with a margin of error between three and five per cent. (Mwape, B., Mumba, J., 2012, p. 71) An example, if 50% of the respondents of a sample are willing to pay 20 US$ for a certain product, then the true value in respect of the complete population would be between 45% and 55% who will pay 20 US$ for the queried product.

But in contrast to random sampling, within commercial practise usually quota samples are used in order to optimise research effort and cost. (Bajpai, N., 2010, p. 267, Brassington, F., Pettitt, S., 2006, p. 262)

Quota sampling is a type of nonprobability sampling where a sample is selected regarding prespecified characteristics. (Meyer, M., Reutterer, T., 2009, p. 239) The total sample should have the same distribution of characteristics like the existing population being studied. (Babbie, E., 2013, p. 192, Black, K., 2011, p. 232)

Burt, Barber and Rigby (2009) explain quota sampling as an approach to obtain a representative research sample by instructing researchers to acquire data from pre-defined (given) subgroups of a population. Quota sampling is

less expensive than most random sampling techniques. (Black, K., 2012, p. 232, Meyer, M., Reutterer, T., 2009, p. 239)

As pointed out before, the empirical data within this thesis was provided by the bus division of the Daimler AG. The sample structure was conducted based on internal sales figures of Mercedes-Benz and Setra (which is a brand name of the premium buses of Daimler) coaches and buses. So the population of vehicles and owners was known upfront the set-up of the study. The quotas for the different customer segments within the sample were defined by (Daimler internal) market experts according to the existing population. Hence, the conducted sample can be considered as representative.

Regarding investigational work or developing qualitative hypotheses about a market between thirty and sixty respondents must be seen as a minimum sample size for each category. (Orme, B., 2010, p. 65) Coming back to a sample size of sixty respondents within the empirical part of this thesis, this sample should be robust enough from a statistical point of view, but on a minimum level.

6.2.4 Standard error

The standard error is a valuable measure because it specifies how accurate a sample mean estimates its population mean. This score indicates how much error one should expect, on the average, between a sample mean and the population mean. (Gravetter, F., 2012, p. 182)

To evaluate the accuracy of empirical results, the relative standard error is a useful parameter and commonly used in commercial practise. (Krug, W., Nourney, M., Schmidt, J., 2001, p. 59) The relative standard error is obtained by expressing the standard error as a percentage of the estimate. It provides an indication of the relative accuracy of the estimate. (Johnson, H., Ollus, N., Nevala, S., 2008, p. 26)

A relative standard error of approximately 10% is usually tolerated in commercial practise and seen as an indicator of an acceptable sample. (Meissner, J., 2004, p. 460) Estimates with a relative standard error of less than 25% are considered satisfactory reliable. (Johnson, H., Ollus, N., Nevala, S., 2008, p. 26) A relative standard error greater than 30% and less than or equal to 50% should be used with caution as the estimates do not meet the standard of reliability or precision. (Bloom, B., 2006, p. 49)

Research method	Relative standard error
Extended Price Sensitivity Meter	**8,92%**
Choice Based Conjoint Measurement	**6,55%**

Figure 78: Relative standard error

(Own illustration)

From the previous figure we can see that in the empirical study of this thesis we found a relative standard error between 6.55% and 8.92% (differentiated by the two applied research methods)

Thus, the estimates of the conducted survey are in an acceptable range and could be considered to meet the standard of reliability and precision.

6.2.5 Standard deviation

“The mean and the standard deviation can be combined to make informative statements about how the values in a data are distributed and about the relative position of a particular value.” (Peck, R., Devore, J., 2012, p. 190) To describe this, it is useful to know how far away a particular observation is from the mean in terms of the standard deviation. (Peck, R., Devore, J., 2012, p. 190)

To interpret the standard deviation of the estimate without a comparative sample, the empirical rule as a special type of the Chebychev theorem should be taken into consideration. “The empirical rule is a very important rule of thumb that is used to state the approximate percentage of values that lie within a given number of standard deviations from the mean of a set of date if the data are normally distributed.” (Black, K., 2011, p. 66)

Peck, Devore (2012) describe the empirical rule as follows. If a data set is normally distributed then:

- Approximately 68% of the observations are within 1 standard deviation of the mean.
- Approximately 95% of the observations are within 2 standard deviations of the mean.
- Approximately 99.7% of the observations are within 3 standard deviations of the mean.

The next figure illustrates the percentages given by the empirical rule.

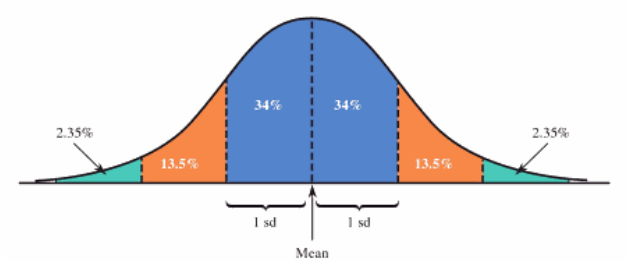


Figure 79: Empirical rule

(Peck, R., Devore, J., 2012, p. 193)

From the conducted data in this empirical analysis the following means and standard deviations could be identified.

	Applied research method	
Purchase likelihood	Extended Price Sensitivity Meter	Choice Based Conjoint Measurement
Mean	6.817	1.461
Standard deviation	3.072	0.741
Distance from the mean	**2.219**	**1.973**

Figure 80: Mean and standard deviation of the data set

(Own illustration)

We can see that the observations are on a level of around two standard deviations of the mean. Based on the empirical rule, this should indicate that within two standard deviations of the mean there will be approximately 95% of the data.

Therefore we assume that the gathered data set within this thesis is statistically robust.

7 Findings of the empirical survey and qualitative hypotheses testing

In this chapter the results of the empirical part will be described. After a short discussion regarding their statistical quality, a detailed presentation of the findings from the used research approaches will follow.

The results will always be reflected on the constructed qualitative hypotheses in chapter5.

7.1 Results from Extended Price Sensitivity Meter

First the findings concerning the Extended Price Sensitivity Meter by Miller, Newton and Smith (1993) will be specified. The analysis of the results from Choice Based Conjoint Measurement will follow.

As described before two different model versions of a trailer were presented to the respondents to receive information regarding their willingness to pay.

From the collected market data the following diagrams were developed according to the original approach by van Westendorp and the extension by Miller, Newton and Smith. The curves were calculated based on a frequency distribution within the related questions.

The following figure shows the aggregated statements of the respondents with regard to the four Price Sensitivity Meter questions. The two additional curves “not cheap” and “not expensive” represent the inverse function of the

curves “cheap” and “expensive”. These curves are required to determine the acceptable price range. (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 98)

Model 1: Glass Fibre assembly

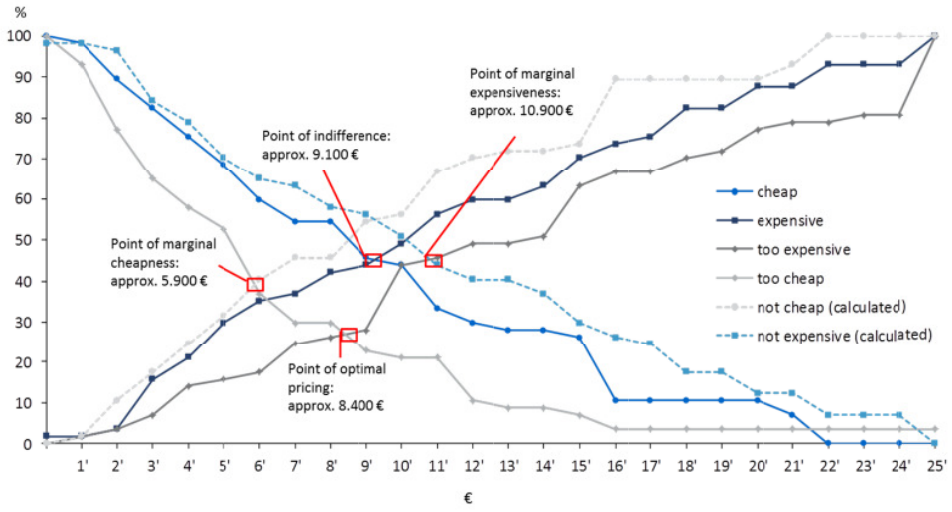


Figure 81: Results of Extended PSM Glass Fibre Assembly

(Own illustration)

The acceptable price range is defined as the range between the lower and the upper price limit, in other words between the price floor and the price ceiling. (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 98)

Regarding this acceptable price range the price floor is defined by the intersection point of the curves “too cheap” and “not cheap”. The price ceiling can be estimated by the intersection of the curves “too expensive” and “not expensive”. (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 98)

Based on the gathered data the acceptable price range for the Glass Fibre assembly would be between €5,900 and €10,900. Please see also the previous figure.

Van Westendorp (1976) found out that the share of sales below or above these points is very small. The major part of sales is always within the range of acceptable prices. (van Westendorp, P., 1976, p. 151)

In respect of the queried “high-end” model with a Glass Fibre assembly the respondents are ideally willing to pay between €8,400 (at the optimal price) and €10,900 (at the upper price limit). The optimal price point can be found at the intersection of the curves “too expensive” and “too cheap”. This point represents the price where the same quantity of respondents either perceives the product as too expensive or too cheap. (Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 99, Xu, J., 2005, p. 180)

From the graph we can see that for the point of optimal pricing approximately 23% of the respondents think that a reasonable price is €8,400 and around 44% state that €10,900 is an expensive, but still reasonable, price for this product (please see the previous figure).

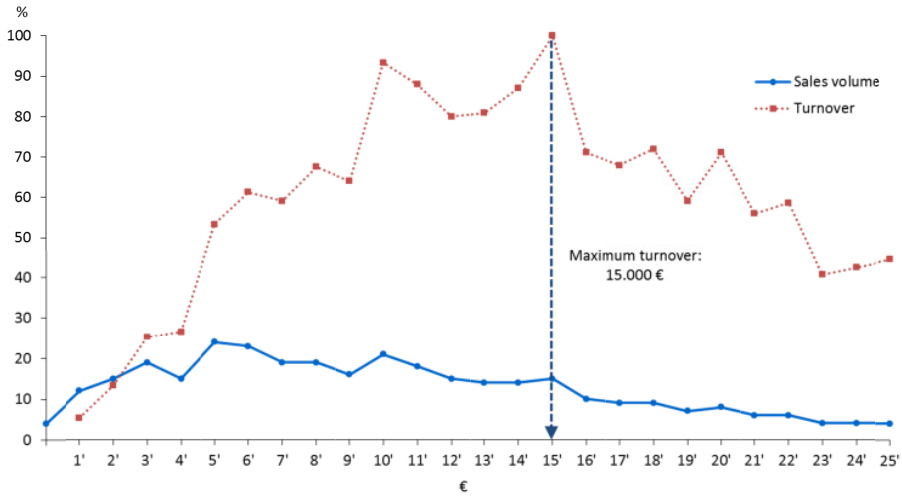


Figure 82: Glass Fibre Assembly – Price demand curve from Extended PSM

(Own illustration)

Based on the aggregated results of two additional questions from the Extended Price Sensitivity Meter a price-demand curve can be derived in order to determine an optimal price and the maximum turnover.

With regard to the gathered price-demand curve the highest demand for the Glass Fibre Assembly model with 24% of the respondents would be at a price of €5,000. But the maximum turnover for the Glass Fibre Assembly model would be at a price of €15,000.

The highest turnover here is defined as price multiplied by the corresponding sales volume. Concerning the results 15% of the respondents would buy the Glass Fibre Assembly model at the price point of €15,000.

In respect of the theory of price elasticity of demand the gathered price-demand curve can principally be described as inelastic. As discussed in chapter 3 price elasticity of demand is defined as:

$$Price\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price}$$

On the basis of this formula price elasticity regarding the Glass Fibre Assembly Model with -0.147 is low (because between 0 and -1). Therefore it is inelastic and the quantity demanded responds little to price changes. As already described, a less elasticity of demand is more beneficial for sellers to raise the price. (Pride, W., Ferrell, O., et. al., 2012, p. 296) Consequently it should be possible to set the selling price for the Glass Fibre Assembly model at the price point of €15,000.

In the following, the Sandwich Panel Assembly model will be analysed with regard to willingness to pay.

Model 2: Sandwich Panel Assembly

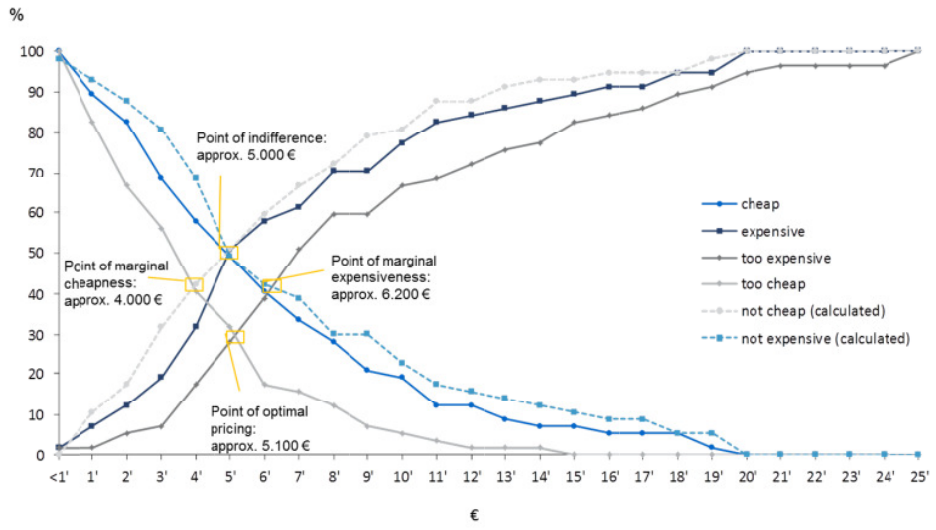


Figure 83: Results of Extended PSM Sandwich Panel Assembly

(Own illustration)

Based on the feedback of the respondents for the Sandwich Panel Assembly model the acceptable price range is between €4,000 and €6,200. Here the optimal price point is at €5,100. Hence around 30% of the customers think

that €5,100 is realistic and nearly 40% consider that €6,200 is an expensive price (but the product is still purchasable).

Nevertheless a price without knowledge about the corresponding turnover is worthless. Thus also for the Sandwich Panel a price-demand curve could be derived by the additional questions of Miller, Newton and Smith.

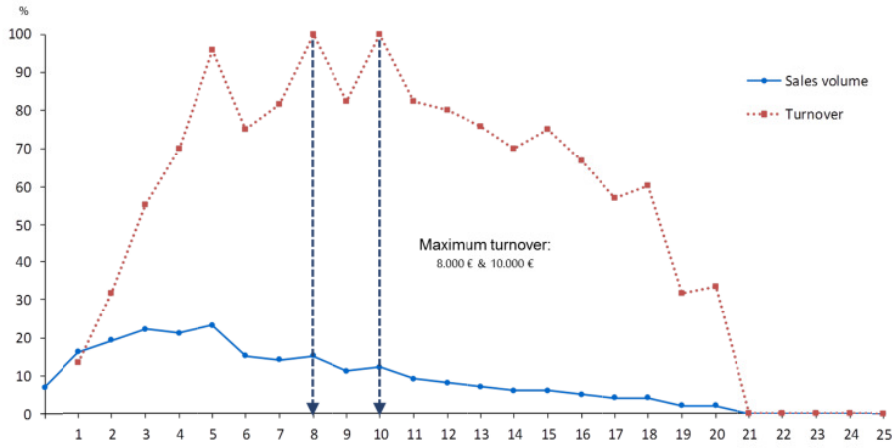


Figure 84: Sandwich Panel Assembly – Price demand curve from Extended PSM

(Own illustration)

Price elasticity concerning the Sandwich Panel Assembly Model with -0.542 is low (because between 0 and -1). Likewise it is inelastic and the quantity demanded responds little to price changes.

Based on the respondents´ feedback, two price points at €8,000 and €10,000 could be identified concerning the maximum turnover. At the price point of €5,000 around 23% of the respondents are interested in buying the Sandwich Panel Assembly model. But multiplied by the corresponding price of €5,000 “only” 96% of the maximum turnover can be realised.

Consequently not the maximum value on the price-demand curve automatically represents the maximum profit. Hence the market price for the Sandwich Panel Assembly should be at €10,000 or at least €8,000.

In the following the results of the Choice Based Conjoint Measurement section will be analysed in detail.

7.2 Results of Choice Based Conjoint Measurement

Comparable to the Extended Price Sensitivity Meter section, the Glass Fibre Assembly model will be analysed first followed by the Sandwich Panel Assembly model.

Upfront the conjoint section the current market price level was determined by asking the respondents the purchase price of their latest purchased trailer. The information was used in order to verify the respondent's price feedback (check for plausibility) and to determine a price anchor for the following conjoint section.

This procedure is familiar within commercial practise. Usually a conjoint exercise will have a price factor with a set number of levels (i.e. in percentage); prices in between are not measured directly. (Guenthel, D., Sturm, L., Gaertner, C., 2009, p. 14, Miller, J., Newton, D., Smith, P., 1993, p. 24)

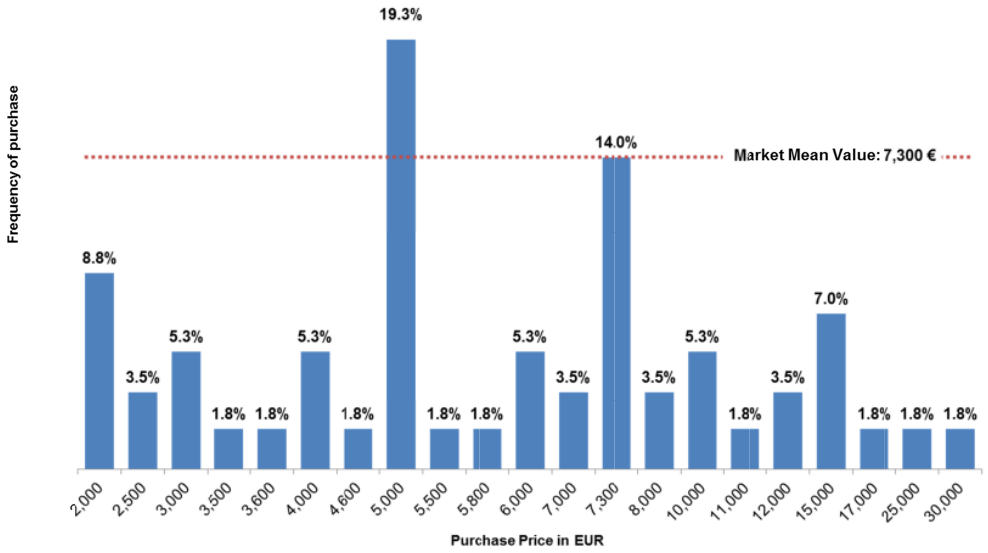


Figure 85: Current market price level of a bus trailer

(Own illustration)

From the previous figure we can see that a mean market price over all 60 respondents is at €7,300. But the prices vary between €2,000 and €30,000 which indicates a broad variance of used trailer models (i.e. from very simple panel assembly to a high-end glass fibre type). Based on expert interviews upfront the study, this distribution represents the current market situation very accurately.

Today, regarding bus trailers nearly all types of existing models are used within commercial practise, for instance to transport bicycles or luggage of tour groups. Sometimes also trailers which are technically designed for passenger cars are utilised with buses or coaches. These current passenger car trailers are less expensive with a market price between €2,000 and €5,000. Therefore the determined mean market price of €7,300 should be a realistic price anchor for the conjoint section in this thesis.

The price-demand curve of the Choice Based Conjoint Measurement data was gathered under the assumption that the respondents only purchase the product with the highest personal utility level. This assumption is based on the first choice or maximum utility theory. “The maximum utility rule allocates all of a respondent´s likely purchase volume to the alternative (i.e. product bundles) with the highest utility, whereas the share of utility and logit rules allocates the total volume across all alternatives to reflect their relative utilities.” (Lilien, G., 2013, p. 171)

Goffin, Lemke, Koners (2010) as well as Baier, Brusch (2009) define the idea of first choice model as the assumption that a consumer always goes for a product or service with the highest overall utility; it focuses only on the consumer´s first choice.

Due to its simple form the first choice or maximum utility method is still widely used. (Cassillas, J., Martinez Lopez, F., 2010, p. 298, Hoelzle, K., 2009, p. 216) “In the conjoint literature, a common approach is to use the “first-choice” or “highest utility” rule in which each person is assumed to choose the product producing the highest utility from a choice set.” (Lusk, J., Shogren, J., 2007, p. 111)

Within the first choice rule the market share of a product or service is calculated by dividing the number of respondents predicted to choose the product or service (with the highest utility) by the total number of customers in the sample. (Lusk, J., Shogren, J., 2007, p. 111)

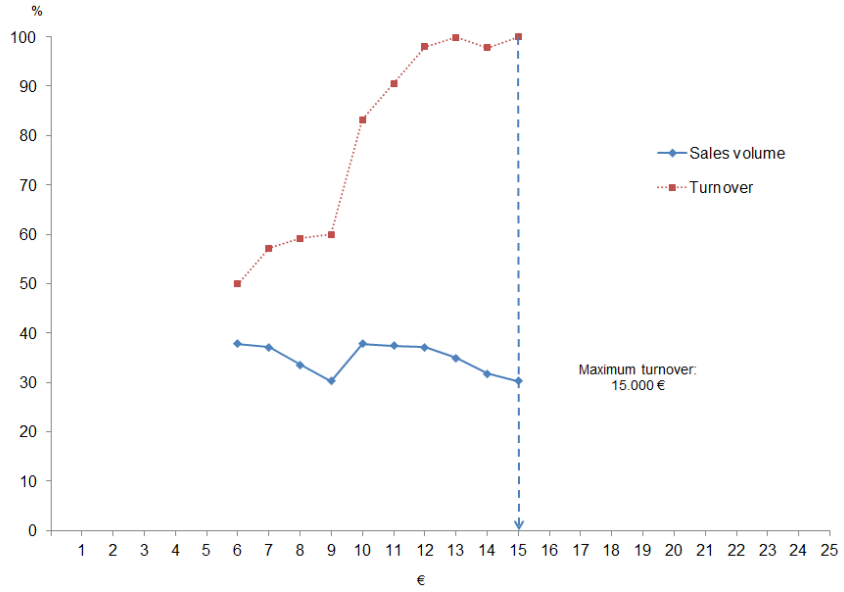


Figure 86: Choice Based Conjoint – Price-demand curve Glass Fibre Assembly

(Own illustration)

Relating to the used choice set, a price-demand curve could be derived. From the previous chart we can see that the highest demand for the Glass Fibre model with nearly 38% of the respondents would be at a price point of €10,000. The maximum turnover could be identified at the price point of €15,000. But the turnover at a price of €13,000 is on an equal level.

Price elasticity from the gathered price-demand curve with a value of -0.227 is low. The product concept shows an inelastic demand, which means that the quantity demanded reacts little to price changes. Thus the market entry price based on the conjoint results could be on the level of €15,000 in order to tap the full potential yield at higher price points (to optimise profits).

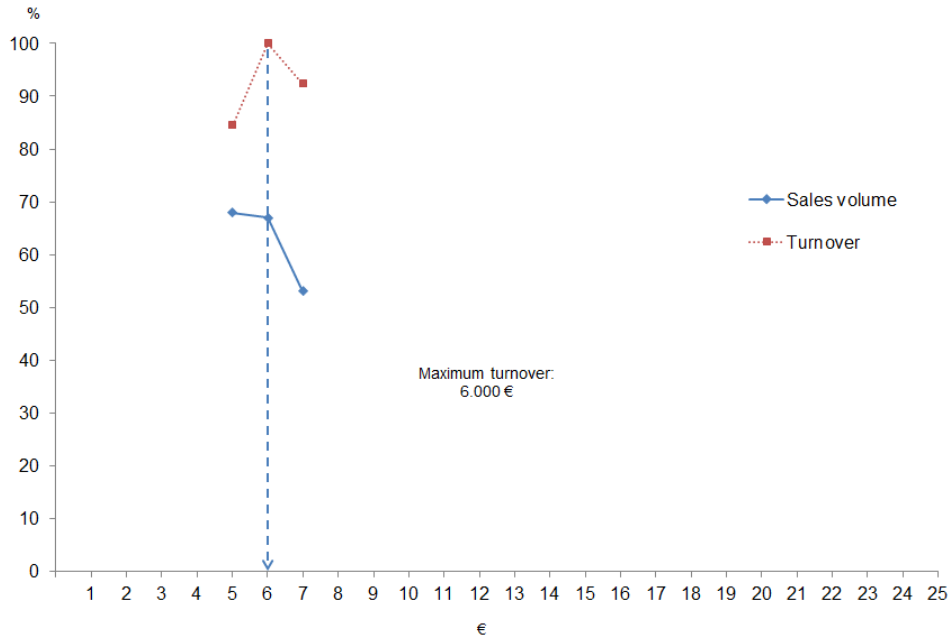


Figure 87: Choice Based Conjoint – Price-demand curve Sandwich Panel Assembly

(Own illustration)

For the Sandwich Panel Assembly model three price points could be realised from the customers´ feedback. Here the optimal point regarding willingness to pay is very close to the price point concerning the optimal turnover. At €5,000 around 68% of the respondents would purchase the presented product. The maximum turnover would be reached at a price level of €6,000 with 67% interested buyers.

With a score of -0.604 the price-elasticity for the full price-demand curve seems to be low. This would indicate an inelastic demand where the quantity demanded reacts little to price changes. But, taking into consideration that only three price points could be determined with the conjoint method the suggested selling price should be at €6,000. This is recommendable because the price-elasticity between the price points €6,000 and €7,000 is high with a score of -1.25.

7.3 Qualitative hypotheses testing

As described before all results will be reflected on the constructed qualitative hypotheses within chapter 5, in order to confirm or non-confirm these assumptions.

The defined qualitative hypotheses will be analysed individually in the following, on the basis of the gathered data in the empirical survey.

7.3.1 Qualitative hypothesis 1

	Qualitative hypothesis	Measurement	Measured value
1	Concerning the Extended Price Sensitivity Meter as a direct survey method, customers are focused too much on price (pre-biased)	Willingness to pay	Determined willingness to pay is significant lower than for Choice Based Conjoint Measurement (10% lower)

Within literature, direct research methods are often discussed critically regarding the segregated consideration of price as a product feature. As depicted before, in direct surveys price is usually reflected in isolation. But in commercial reality, the customers typically balance costs with benefits. (Simon, H., Fassnacht, M., 2009, p. 116, Woratschek, H., Roth, S., 2006, p. 379)

Thus, from a theoretical standpoint, in direct surveys the respondents´ attention could be focused too much on price, resulting in an atypical price measurement. (Simon, H., Fassnacht, M., 2009, p. 116, Woratschek, H., Roth, S., 2006, p. 379, Homburg, C., Krohmer, H., 2003, p. 577)

With qualitative hypothesis 1 this theoretical deduction will be analysed on the basis of the gathered results of the Extended Price Sensitivity Meter. The

collected data will be reflected directly at the results of the indirect research approach Choice Based Conjoint Measurement.

In indirect surveys, price is not the focus. It is just one element or attribute of the queried product. (Simon, H., Fassnacht, M., 2009, p. 116, Homburg, C., Krohmer, H., 2009, p. 669) In respect of the indirect procedure, a hypothetical bias on price can be minimised. (Homburg, C., Krohmer, H., 2009, p. 669) In the context of pricing research, Choice Based Conjoint Measurement is of particular importance and a popular method. (Simon, H., Fassnacht, M., 2009, p. 117, Homburg, C., Krohmer, H., 2009, p. 669)

The following table is divided into lines representing the results for the queried products and columns for the used research methodologies. Within the lines the information regarding optimal prices i.e. willingness to pay can be found. Within the columns the data concerning the different research approaches is displayed.

The table consists of the results from both applied research techniques while the data was derived by the use of the already mentioned software packages SPSS and Sawtooth CBC System for Choice Based Conjoint Analysis.

		Extended Price Sensitivity Meter	Choice Based Conjoint Measurement
Glass Fibre Assembly Model	Maximum willingness to pay	€10,000	€10,000
	Maximum turnover	€15,000	€15,000
Sandwich Panel Assembly Model	Maximum willingness to pay	€5,000	€5,000
	Maximum turnover	€8,000 & €10,000	€6,000

Table 3: Comparison of the results from both research approaches

From the previous table we can identify that the results with regard to the maximum willingness to pay from both research approaches are similar for the same product.

For the Glass Fibre Model both approaches deliver a maximum willingness to pay of €10,000. In addition the calculated maximum turnover is also identical with €15,000 for both methods.

Regarding the Sandwich Panel Assembly model, maximum willingness to pay from both research approaches is at €5,000. But with regard to the calculated maximum turnover a difference between 33% (€6,000 versus €8,000) and 67% (€6,000 versus €10,000) could be identified. In both cases the determined maximum turnover is higher for the direct method compared to the indirect method.

Overall, the gathered data from both research methodologies are on a comparable level. Especially concerning the criterion of maximum willingness to pay, exactly the same price points could be gathered.

Hence, qualitative hypothesis 1 cannot be confirmed in respect of a lower determined willingness to pay by the Extended Price Sensitivity Meter than from Choice Based Conjoint Measurement.

7.3.2 Qualitative hypothesis 2

	Qualitative hypothesis	Measurement	Measured value
2	The Extended Price Sensitivity Meter is appropriate for innovative product concepts (conclusion of the authors Miller, Newton & Smith)	Willingness to pay	Determined willingness to pay is on the same level as for the Choice Based Conjoint Measurement

The authors of the Extended Price Sensitivity Meter, Miller, Newton and Smith, point out (1993) that their research method should be applicable for innovative product concepts.

Miller, Newton and Smith (1993) claim that the Extended Price Sensitivity Meter can be very useful at early stages of development, before the parameters of the offers (products or services) are defined. But the authors also remark that even alternative approaches like the Choice Based Conjoint Measurement may deliver better measurements regarding the acceptance / importance of attributes. (Miller, J., Newton, D., Smith, P., 1993, p. 24)

To examine the statements of the authors, in this thesis, an innovative product like the aerodynamic optimised trailer will be tested concerning willingness to pay by two different research approaches. The presented aerodynamic and technically optimised bus trailer can be understood as a very innovative product in the bus arena because currently no manufacturer of bus specific trailers on the market offers such a product. Today, only standard products like the sandwich panel assembly model are offered.

The gathered data of the Extended Price Sensitivity Meter will be reflected in the results of the recommended Choice Based Conjoint Measurement.

		Extended Price Sensitivity Meter	Choice Based Conjoint Measurement
Glass Fibre Assembly Model	Maximum willingness to pay	€10,000	€10,000

Table 4: Maximum willingness to pay from both research methods

As discussed before (in qualitative hypothesis 1), identical price points with regard to willingness to pay could be identified either from the results of the Extended Price Sensitivity Meter or the Choice Based Conjoint Measurement. The previous table shows the results regarding the queried Glass Fibre Assembly model of both methods.

Based on these findings it can be assumed that the Extended Price Sensitivity Meter works for innovative products at a very early stage of development.

The perceived value of product attributes (part-worth utilities) is of relative importance with regard to products, concept tests or particularly of innovative products. (Goffin, K. Lemke, F., Koners, U., 2010, p. 194)

The product definition upfront a market launch is a very important success factor. When firms accurately define their products at a very early stage of development, these products are approximately three times more likely to be successful. Compared to products which are not well defined, they are more profitable and gain a higher market share. (Lilien, G., 2013, p. 162) Thus, market information, to identify the product features which appeal to the customers, is of particular importance. (Lilien, G., 2013, p. 162)

The Extended Price Sensitivity Meter is not applicable to determine the customers´ preference structure (regarding a product or a service). This technique does not deliver any part-worth utilities with regard to the products´ attributes, because of the design of the method.

For this purpose a preference measurement is needed which can be realised by the Choice Based Conjoint Measurement method. (Netzer, O., Touiba, O., Bradlow, T. et. al., 2008, p. 338) Today in marketing, Conjoint Measurement is the most popular technique to determine customer preferences. (Eckert J., Schaaf, R., 2009, p. 32)

To determine those customer preferences (i.e. part-worth utilities) usually Bayesian models are used in marketing research. (Baumgartner, B., Steiner, W., 2009, p. 148) In Conjoint Measurement studies typically part-worth utilities are estimated with Hierarchical Bayesian models. (Rao, V., 2008, pp. 35, 37)

With the use of Hierarchical Bayesian estimation, part-worth utilities could be estimated based on the data from Choice Based Conjoint Measurement. “This development occurred in the mid-1990s, and has greatly improved the usability and predictive validity of CBC data.” (Sawtooth Software, 2013, p. 3)

Hierarchical Bayesian estimations can be realised with the help of the software package “CBC System for Choice Based Conjoint Analysis” from Sawtooth Software Inc. Today, the CBC System from Sawtooth Software is the most frequently used software for conjoint analysis. (Sawtooth Software,

2013, p. 1) Therefore in this thesis the gathered data from the Choice Based Conjoint Measurement were also examined with this software.

The analyses of the Choice Based Conjoint Measurement results show that the single part-worth utilities differ among themselves. This would lead to the assumption that attributes of the queried product may have a different impact on the overall benefit of a product.

“Sometimes we want to characterise the relative importance of each attribute. We can do this by considering how much difference each attribute could make in the total utility of a product. That difference is the range in the attribute’s utility values.” (Orme, B., 2010, p. 79)

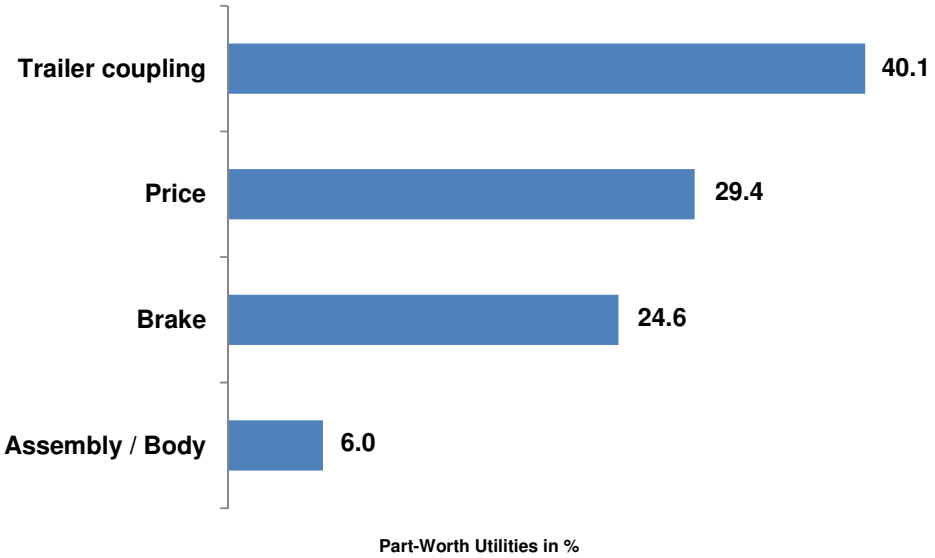


Figure 88: Part-Worth Utilities Choice Based Conjoint Measurement

(Own illustration)

The previous figure displays the determined part-worth utilities for the differently defined attributes of the presented trailer concepts.

The analysis of the part-worth utilities from the Conjoint Measurement shows that with a score of 40.1%, the attribute “trailer coupling” is particularly the most valuable criterion in respect of the overall benefit of the product. After this, the criteria “price” and “brake” follow. With a score of 6.0% the feature “assembly/body” is seen as the least important feature from a customer’s point of view.

In a next step the different attribute levels were analysed to generate a more detailed view on the results of the Choice Based Conjoint Measurement. The analysis should deliver information to better understand the customer´s perception of the main drivers within the diverse queried attributes, i.e. which brake or coupling system supplies the highest benefit for the respondents.

Attribute (maximum score)	**Attribute Level**				
Brake	Overrunning brakes	Compressed air brake			
24.6	24.6	0.0			
Trailer coupling	Trailer hitch ball coupling	Bar coupling	DIN drawbar eye		
40.1	40.1	6.6	0.0		
Assembly / Body	Glass-fibre Assembly	Assembly with sandwich panels			
6.0	0.0	6.0			
Price	20% under market mean value	10% under market mean value	Market mean value	10% above market mean value	20% above market mean value
29.4	29.4	27.8	26.2	5.8	0.0

Table 5: Part-Worth Utilities on an Attribute Level

(Own illustration)

The analysis of the part-worth utilities on an attribute level shows that the less technical characteristic “overrunning brakes” represents a much higher benefit than the technical premium component “compressed air brake”.

For the attribute “trailer coupling” likewise the less technical and simpler version “trailer hitch ball coupling” is much more important than the “bar coupling” or the “DIN drawbar eye”. With an absolute value of 40.1 the “trailer hitch ball coupling” is the most valuable criterion for the respondents, followed the “bar coupling” with a part-worth utility score of only 6.0.

Concerning the attribute “assembly/body” the difference between the two queried attribute levels is least distinctive. The “assembly with sandwich panels” is somewhat more interesting for the customers than the “glass-fibre assembly”. This would mean that a high-end version would have no positive effect (i.e. a higher utility level) on the customers´ demand. Because of expected higher manufacturing cost (regarding the applied material mix) the manufacturer should offer the standard version with a sandwich panel assembly.

With regard to the attribute price there is little variance to be registered between the levels “mean market value” and 10% or 20% under the mean market value. Generally it can be remarked that the price should be at least on a market price level. A higher price than the market mean value, at least 10% above the market level, is considered to be very unattractive for the respondents. In this case the utility level falls from 26.2 down to 5.8.

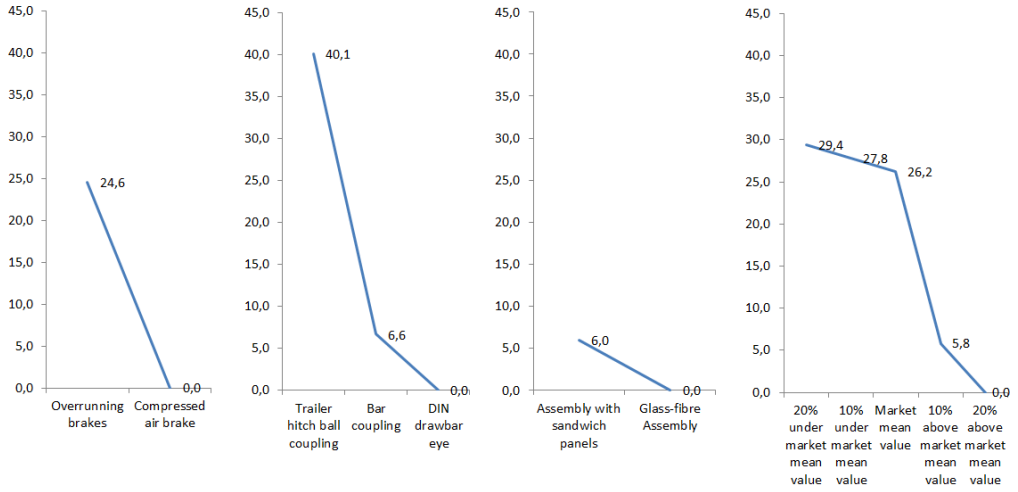


Figure 89: Conjoint Attribute levels at a glance

(Own illustration)

To sum up, the attribute coupling is seen as the most beneficial feature from the respondents´ point of view. Especially the attribute level "trailer hitch ball coupling" should deliver the highest utility and seems to be the key value driver for the customers. The next important feature is the price of the product followed by the brake system. These two attributes or features are almost equally important for the customers. The attribute "assembly or body" is by far the least important attribute of the presented trailer concepts.

Based on the findings from the in-depth attribute level analysis the "ideal" product should consist of the following technical features:

- Overrunning brakes
- Trailer hitch ball coupling
- Assembly with sandwich panels
- Priced at least on a market mean price level (but not higher)

Consequently an ideal (because customer oriented) product would be a trailer with standardised features on a market price level and not, for instance, the innovative one at a premium price level.

In an isolated view on the findings regarding willingness to pay, the results may affirm the assumption of Miller, Newton and Smith, that their method is applicable for innovative products. But taking the output of the part-worth utilities analysis into consideration a major limitation of the Extended Price Sensitivity Meter will be disclosed. Due to its design, this research method cannot determine customer preferences regarding single product features.

However, the determination of the customer expectations is an important factor in the product development process. (Lilien, G., 2013, p. 162) In this case the Conjoint Measurement is the better alternative.

In general, qualitative hypothesis 2 "The Extended Price Sensitivity Meter is appropriate for innovative products" is questionable.

For a well-defined product or service (according to the customers' needs) the Extended Price Sensitivity Meter may deliver usable results. But if the product design process is not finished (for instance technical features are still discussable) this research method may not be applicable.

7.3.3 Qualitative hypothesis 3

	Qualitative hypothesis	Measurement	Measured value
3	To determine willingness to pay, the Extended Price Sensitivity Meter is an alternative method for the Conjoint Measurement approach	Maximum turnover	The price points concerning the maximum turnover differ not more than 5% between the two research methods

As already pointed before, currently Choice Based Conjoint Measurement is one of the most frequently used research techniques concerning pricing issues. Another commonly used research approach in commercial practice is the Extended Price Sensitivity Meter by Miller, Newton and Smith (1993).

In literature the advantages and disadvantages of direct and indirect research methods are discussed. As a recap, here the main pros and cons of direct and indirect surveys will follow. For a detailed explanation please see chapter 4.

Direct surveys represent an easy, fast and cost-effective research method. (Gieseking, T., 2009, p. 58, Meffert, H., 2008, p. 175, Roth, S., 2006, p. 22, Backhaus, K., Voeth, M., et.al., 2005, p. 440) Compared to direct surveys, a higher validity of data is assumed for indirect research approaches. (Roth, S., 2006, p. 33) But, the procedure of indirect surveys is more complex and less easy to handle. (Sattler, H., Hensel-Boerner, S., 2007, p. 69)

Based on the economic crisis, the automotive aftermarket customers became more and more price oriented so it was essential for manufacturers to set the prices for their products correctly. “In 2009, global economic production fell for the first time in six decades. Global demand for cars fell by four per cent, with commercial vehicles hit harder still; recording a nine per cent drop in international production.” (Bitonto, S., Kolbe, M., McDougall, W., 2012, p. 4)

In a declining automotive market and due to reduced profits the manufacturers have to act very cost-effectively e.g. by optimising expenditures. Regarding the economic situation one effect is a reduction of the companies´ marketing research budgets. As already pointed out, in October 2012 the British Institute of Practitioners in Advertising (IPA) reports in their IPA Bellwether Survey that 23 per cent of companies are likely to reduce their marketing expenditures. This decision is mainly based on the downturn in confidence with regard to the slowing of the global economy. (IPA, 2012)

Therefore it would be important for researchers in commercial practise to have a less cost-intensive alternative method in pricing research, besides Conjoint Measurement. This should be analysed with qualitative hypothesis 3 *“To determine willingness to pay, the Extended Price Sensitivity Meter is an alternative method for the Conjoint Measurement approach”*.

The next table illustrates the results with regard to the determined maximum turnover of both research approaches. As discussed before in this chapter, a price without knowledge about the corresponding turnover is worthless. Thus, for the test of qualitative hypothesis 3 the price points concerning the maximum turnover will be considered and not the maximum willingness to pay.

		Extended Price Sensitivity Meter	Choice Based Conjoint Measurement
Glass Fibre Assembly Model	Maximum turnover	€15,000	€15.000
Sandwich Panel Assembly Model	Maximum turnover	€8,000 & €10,000	€6,000

Table 6: Results regarding maximum turnover from both research approaches

The analysis in respect of the maximum turnover shows a mixed picture. For one model we have identical price points from both research methods but for the other model we found different price points.

With €15,000 for the Glass Fibre Assembly model, both research approaches show identical price points concerning the maximum turnover. But for the Sandwich Panel Assembly model the prices differ. Regarding the Choice Based Conjoint Measurement a maximum turnover of €6,000 could be identified. For the Extended Price Sensitivity Meter the determined price points are between 33%and 66% higher than the conjoint results.

Returning to qualitative hypothesis 3, the results for the innovative Glass Fibre Assembly model are identical from both methods. Based on this, the qualitative hypothesis may be confirmed. But with regard to the findings for the standard product, the Sandwich Panel Assembly model, the qualitative hypothesis should be negated.

This may lead to the assumption that the cost-effective research approach is not similarly powerful to a more complex and cost-

intensive method. Thus, qualitative hypothesis 3 cannot be confirmed completely.

However, one limitation of this empirical analysis must be taken into consideration. In this thesis only two products were analysed in only one industry (automobile) and in only one business segment (B2B). Further research is recommended regarding other products, industries or business segments to examine the applicability of the Extended Price Sensitivity Meter on a broader basis.

7.3.4 Qualitative hypothesis 4

	Qualitative hypothesis	Measurement	Measured value
4	The Extended Price Sensitivity Meter is applicable within the B2B arena with products which are not self-explanatory	Determined price points	Customers are able to state plausible product prices (plausibility check by the results of the Choice Based Conjoint Measurement)

In the original article to the Extended Price Sensitivity Meter (1993), Miller, Newton and Smith presented their new research approach by means of a fictive example of a product introduction to the consumer business. Furthermore, the authors explained that they already applied the method in commercial practise for product innovations in the B2B business (the telecommunication industry in the early 1990s).

As already pointed out, in literature there are no or only few publications to be found with a description regarding the applicability of this research approach. Hence, the applicability of the approach in B2B business and innovative products should be analysed with the aid of a real product test.

Because of its importance (as described in chapter 4), in this thesis the empirical test was carried out within the B2B arena of the automotive industry.

To examine qualitative hypothesis 4 *"The Extended Price Sensitivity Meter is applicable within the B2B arena with products which are not self-explanatory"*, in this thesis an innovative product was tested in respect of willingness to pay.

This product, an aerodynamic optimised bus trailer, must be explained to the respondents upfront the pricing survey. This is essential because the product idea is completely new within the bus and coach business and the respondents should get a good impression of the product features.

Mainly the technical (and also economical) benefits of special features had to be clarified. For instance the aerodynamic optimised body was explained concerning the technical and economic benefit of saving fuel. On the other hand the interviewer had to describe the main disadvantage of the structural shape. As a consequence of this streamlined assembly the storage compartment decreased noticeable.

This trade-off had to be explained very carefully because the customer had to decide between the beneficial fuel consumption and the disadvantageous loading space.

Consecutively the next figure shows the gathered data from both research approaches regarding willingness to pay. In this diagram the results of both methods for the Glass Fibre Assembly model are displayed.

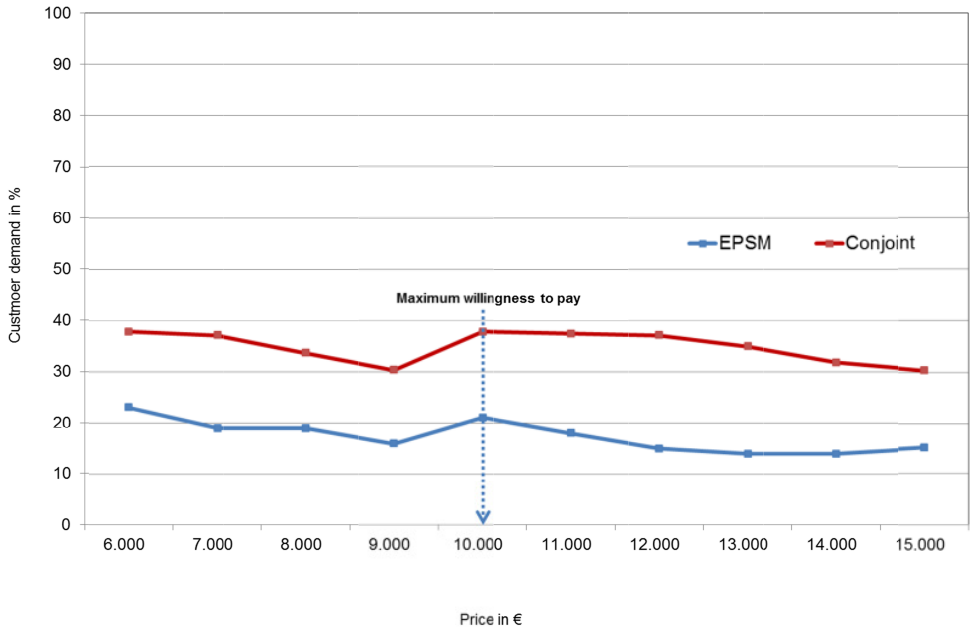


Figure 90: Price demand curve Glass Fibre Assembly Model

(Own illustration)

From the graphs we can see that both lines run almost parallel but on a different level. The price demand curve of the Choice Based Conjoint Measurement results generally runs on a higher level, compared to the Extended Price Sensitivity Meter data.

A deepened analysis of the results offers slightly diverse customer reactions on the considered price demand curves. Especially the price range between €10,000 and €14,000 should be examined in detail.

Price in €	Price Elasticity EPSM		Conjoint	
6,000 - 7,000	-1,04		-0,11	
7,000 - 8,000	0,00		-0,66	
8,000 - 9,000	-1,26		-0,79	
9,000 - 10,000	2,81		2,23	
10,000 - 11,000	-1,43		-0,11	
11,000 - 12,000	-1,83	**-1,02**	-0,09	**-0,52**
12,000 - 13,000	-0,80		-0,71	
13,000 - 14,000	0,00		-1,18	
14,000 - 15,000	1,00		-0,64	

Table 7: Price elasticity of price demand curves Glass Fibre Assembly model

(Own illustration)

With a score of -0.52 the price-elasticity of the conjoint results (in this price range) is low and few changes in demand can be assumed due to price changes. In contrast, the price elasticity regarding the price demand curve for the results of the Extended Price Sensitivity Meter is high in this area with a score of -1.02. Accordingly, it is elastic with higher demand reactions concerning price changes. Thus, within the direct survey section the respondents react more price-sensitively.

But in general, the conducted data show that the Extended Price Sensitivity Meter delivers reasonable results with regard to willingness to pay for innovative products. Particularly the price point for the respondents' maximum willingness to pay is identical at €10,000. Additionally, as described before (for instance in qualitative hypothesis 1), the determined price in respect of the maximum turnover for the Glass Fibre Assembly trailer is also equal to €15,000.

Hence, this information would help marketers to set the market entry price, even for products which are not self-explanatory. Then the Extended Price Sensitivity Meter would be a cost-effective alternative method to determine willingness to pay. In times of decreasing market research budgets it would be very beneficial for market researchers in commercial practise to have an efficient alternative solution.

Based on the findings of the empirical study, qualitative hypothesis 4 *"The Extended Price Sensitivity Meter is applicable within the B2B arena with products which are not self-explanatory."* can be confirmed.

7.3.5 Qualitative hypothesis 5

	Qualitative hypothesis	Measurement	Measured value
5	The Extended Price Sensitivity Meter only works with respondents who do not have any preconceived price perception (limitation by the authors Miller, Newton & Smith)	Maximum willingness to pay at respondents who are aware about market prices (they already own a bus trailer)	Determined price points from the Extended Price Sensitivity Meter are reasonable with regard to the current market price level

As a limitation of the Extended Price Sensitivity Meter, the authors found out that the new method assumes respondents have little or no preconceived price perceptions. Miller, Newton and Smith do not clarify any reason for this statement.

Possibly, this assumption is based on the fact that the authors tested the method with customers who have little or no price perception, before they published the article. "In all cases, the products and services were relatively innovative and the clients had very little information regarding the offerings' appeal." (Miller, J., Newton, D., Smith, 1993, p. 17)

In the empirical study of this thesis, all respondents own a bus trailer at present. Therefore it is assumed that the customers were already aware of market prices and the value of the product, with regard to their business. “When a customer purchases a product or service, they compare the price they pay with the benefits they receive in return, which we refer to as the ‘value’.” (Billige, M., Brook, A., Darlington, N., Smith, D., 2010, p. 30)

On this basis the previously described limitation of the Extended Price Sensitivity Meter should be discussed in qualitative hypothesis 5 *“The Extended Price Sensitivity Meter only works with respondents who do not have any preconceived price perception.”*

To analyse the described limitation of the Extended Price Sensitivity Meter, the collected price points with regard to willingness to pay will be considered. The results will be compared to the determined market price level, where the respondents were asked to state the price of their latest purchased bus trailer.

This should give a first overview if the Extended Price Sensitivity Meter can be applicable at respondents who already have price perceptions about the queried products.

To participate in this pricing study, as a precondition, all respondents had to own a bus trailer. This would guarantee that the customers were aware of market prices.

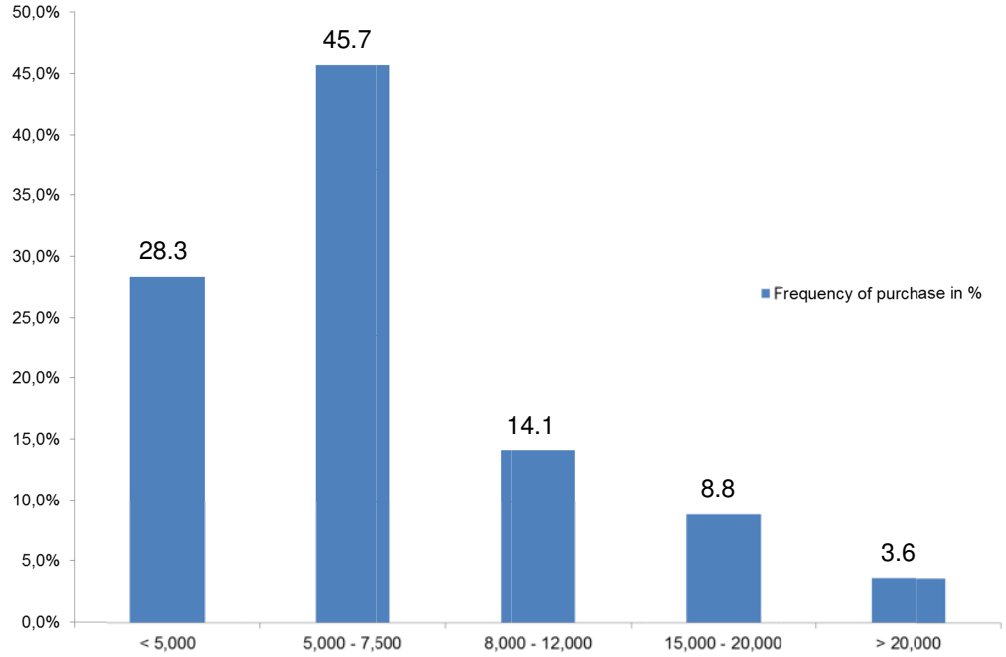


Figure 91: Determined purchase prices of bus trailers

(Own illustration)

On the basis of the gathered data regarding the last purchase price of a bus trailer, five price segments could be identified. From the previous figure we can see that 74% of the respondents spent no more than €7,500 for their trailer, with the majority of purchases between €5,000 and €7,500. 14.1% of the customers purchased a product in the middle price range between €8,000 and €10,000 and another 12.4% own a premium bus trailer with a price above €15,000.

As explained before, due to the findings in several expert interviews prior to the survey the above illustrated distribution of purchase or market prices could be seen as realistic.

In a next step the gathered market prices will be compared on a detailed level with the results concerning willingness to pay from the Extended Price Sensitivity Meter.

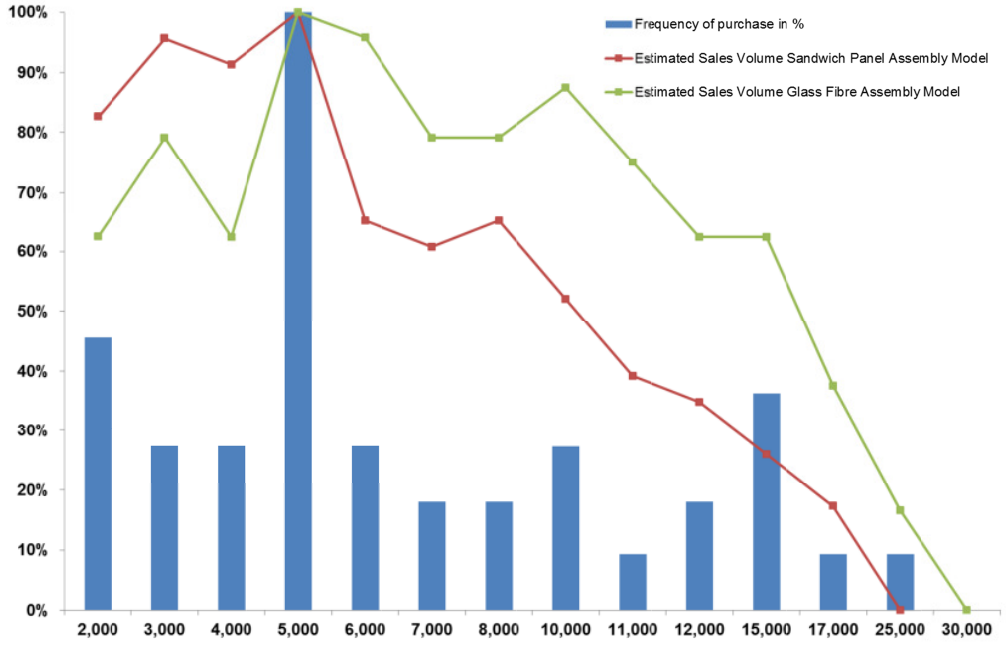


Figure 92: Market price versus Estimated Sales Volume EPSM

(Own illustration)

In the previous figure the determined market price of a bus trailer (price of last purchase) are illustrated versus the conducted price demand curves by the Extended Price Sensitivity Meter.

Generally, nearly all (13 out of 14) determined price points regarding willingness to pay for both product versions, are located within the identified range of market prices, referred to the last purchase of a bus trailer. This is a first indicator for reasonable (because market oriented) price information from the applied research approach.

Moreover, we can see from the graphs of the Glass Fibre Assembly model, that the willingness to pay is significantly higher than for the Sandwich Panel Assembly version. Especially in the price segment above €6,000, higher price points could be found for the Glass Fibre Assembly Model. In this price range the mean deviation is 39.6% between the two price demand curves. Based on the information from the expert interviews, the determined deviation can be interpreted as a reasonable price gap between the two queried product concepts (for example the expected cost-benefit ratio with regard to fuel saving for the aerodynamic optimised version).

This would lead to the conclusion that the respondents were able to distinguish very accurately between the two product concepts in order to state usable price points.

On the basis of these outcomes, the statement of Miller, Newton and Smith with regard to the assumption for their method that the respondents have no preconceived price perception, should be questionable.

With regard to the findings on this thesis the qualitative hypothesis 5 *"The Extended Price Sensitivity Meter only works with respondents who do not have any preconceived price perception."* cannot be confirmed.

7.4 Conclusions

The discussion of the qualitative hypotheses shows, that under certain conditions, the cost effective market research approach Extended Price Sensitivity Meter could be a usable alternative to more complex methods than the Choice Based Conjoint Measurement.

In qualitative hypothesis 1 we found out that literature discussed limitation of direct research approaches, with too much focus on price, could not be confirmed in this study. Predominantly an equal price level could be identified between the applied methods. Only in one case different price points for the customers' willingness to pay were determined, with higher prices for the Extended Price Sensitivity Meter.

The analysis of qualitative hypothesis 2 may disclose a limitation not previously listed of the direct research approach. Miller, Newton and Smith found out that their method should be applicable for product innovations. Moreover, the authors pointed out that the Extended Price Sensitivity Meter can be extremely useful at very early stages of the product development process, before the product features are designed. (Miller, J., Newton, D., Smith, P., 1993, p. 24)

But, based on the empirical findings this theory cannot be confirmed. With the Extended Price Sensitivity Meter only price measures can be realised. Preference structures cannot be determined. This is strength of Choice Based Conjoint Measurement where the researcher is able to simulate different product variants in respect of a predicted sales volume.

Therefore one should be conservative with recommendations for a generalised applicability of a research method. It always depends on the purpose of the measurement. What should be measured? A profit optimised price point, the importance of single attributes of a product or what else?

If the purpose of research is to find price thresholds or an optimal market price including information concerning a price-response function for a new or modified product, than the Extended Price Sensitivity Meter could be a worthwhile research approach in commercial practise (especially due to its low cost and simple handling).

The goal of qualitative hypothesis 3 was to find out whether a less complex research method delivers comparable results to a high sophisticated but cost-intensive research method. On the basis of the findings one should remark that the study shows mixed results.

For the high-end product (the Glass Fibre Assembly Model) identical price points with regard to willingness to pay and the maximum turnover could be found. Concerning the Sandwich Panel Assembly Model also identical prices for the customers' willingness to pay could be identified. But regarding the maximum turnover the results of the applied methods differ significantly, with a deviation between 33% and 66%.

In this study the less expensive research method does not deliver consistent results along the price-demand curve (concerning the maximum turnover). Hence, qualitative hypothesis 3 cannot clearly be answered. Further research

is required in order to re-test the applicability of the practicability of the Extended Price Sensitivity Meter, for instance in other business segments or with other products.

With qualitative hypothesis 4 the applicability of the direct research regarding non self-explanatory products in the B2B segment method was analysed. Due to restricted market research budgets, marketers are forced to conduct market data with less expensive approaches.

As an example of a not self-explanatory product with new features (which have to be explicated) the Glass Fibre Assembly Model was chosen. The analysis shows that the business customers were able to state reasonable prices. Both price points, the maximum willingness to pay and the maximum turnover, are identical from both methods. Thus, the cost-effective method should be an alternative to the cost-intensive conjoint approach. But, as a limitation of the practicability, the findings of qualitative hypothesis 2 must be taken into consideration. The product design process should be almost finalised with an accurate understanding of the definite product features.

The main goal of the last qualitative hypothesis was to examine a limitation of the Extended Price Sensitivity Meter, which was expressed by the authors in the original article to the new method. Miller, Newton and Smith argued that their research approach is only applicable under the assumption that the respondents have little or no preconceived price perceptions.

To test qualitative hypothesis 5, only owners of a bus trailer were asked to mention their willingness to pay regarding the two queried trailer concepts. The analysis shows that the participants of the study were able to state realistic prices. This would lead to the conclusion that the research approach of Miller, Newton and Smith also works with customers who are already aware of market price levels.

In summary, under certain conditions the cost-effective research method delivers utilisable pricing data. For example, the method should be applicable for products which are not self-explanatory or with customers who are aware of market price levels. But limitations concerning the determination of customer preferences should be taken into consideration by choosing the right research approach prior to a market study.

Hence, to determine price thresholds or price-demand functions for products near market launch, the research method should work. If product features beside the price are not finally defined, a method to measure customer preference would be the better alternative.

The following chapter will sum up the major findings of the thesis, including a discussion of contribution (to knowledge or commercial practise) as well as an outlook for further research.

8 Conclusions: Lessons learned, Contribution, Limitations and outlook for future research

8.1 Introduction

Within chapter one and two of this thesis the importance of pricing decisions with regard to a company´s profit was discussed in detail. It could be pointed out that setting the right (profit optimised) market price is not an easy task for marketers. Once the price is set too low - below the customers' maximum price point - it is laborious to mark up and potential earnings are lost. (Marn, M., Roegner, E., Zawada, C., 2003a, p.1)

To determine the customers´ willingness to pay a number of different market research methodologies could be found which was in the content of chapter three. Each method has its own strengths and weaknesses. Thus before starting research in respect of pricing issues it is crucial to define the goal of the study and to understand the market environment / structure.

In this thesis Choice Based Conjoint Measurement, one of the most frequently used research approaches in pricing, was compared with a (so to speak) insider tip, the Extended Price Sensitivity Meter by Miller, Newton and Smith. The idea was to find out under what circumstances it is possible to determine market prices by the use of a low-cost alternative like the Extended Price Sensitivity Meter.

In literature several comparisons of pricing research methods exist, with heterogeneous results. In some cases the highly sophisticated method

Conjoint Measurement shows superiority over less complex research approaches like the Price Sensitivity Meter. In other cases direct surveys were considered as superior. But no study was found in any literature so far where Extended Price Sensitivity Meter as a direct survey method was compared with indirect surveys like the Choice Based Conjoint Measurement.

As described, the Extended Price Sensitivity Meter was invented in the 1990s to modify the existing Price Sensitivity Meter by Peter van Westendorp which had been introduced in the 1970s. The idea of the authors was to combine elements of buy-response surveys and price sensitivity measures. (Miller, J., Newton, D., Smith, P., 1993 p. 3) Within commercial practise this method becomes more and more popular, particularly as a very interesting low-cost research approach compared to other cost-intensive alternatives like Conjoint Measurement.

Thus, in the empirical part of this thesis the Extended Price Sensitivity Meter was compared directly to the Choice Based Conjoint Measurement.

8.2 Contribution to knowledge

With regard to contribution to knowledge, this thesis should reflect two perspectives. Either theoretical (from literature) or practical aspects (from commercial practise) were discussed in order to present new findings.

8.2.1 Contribution to theory / literature

From a theoretical (scientific) standpoint, no comparison of the two applied research techniques can be found in literature. So in this thesis a direct comparison of the two research approaches was presented for the first time (including a detailed analysis of the results). Referring to this, already known advantages and limitations of direct surveys and especially regarding the applied Extended Price Sensitivity Meter method were discussed.

To review the pros and cons of direct surveys from literature, the qualitative hypotheses 1, 2 and 5 were constructed.

Qualitative hypothesis 1 deals with the conclusion from literature that for direct surveys customers are focused too much on price (pre-biased). For example Simon, Fassnacht (2009), Berenkoven (2009), Breidert, Hahsler, Reutterer (2006), or Voelckner (2006) confirm this theoretical effect (strategic and hypothetical bias) as a major point of criticism concerning direct surveys. “By directly asking the customers for a price, there is an unnatural focus on price which can displace the importance of a product’s other attributes.” (Breidert, C., Hahsler, M., Reutterer, T., 2006, p. 8)

With regard to this price focus, an overstatement of the attribute price could occur which usually leads to a lower willingness to pay. (Wicker, P., 2009, p. 75) In contrast, with indirect surveys an isolated view on the price will be avoided. Here the respondents always have to balance the single attributes of a product, like a trade-off in real purchase situations. (Simon, H., Fassnacht, M., 2009, p. 116)

To test **qualitative hypothesis 1**, a significant lower willingness to pay for the Extended Price Sensitivity Meter, compared to the Choice Based Conjoint Measurement, was assumed (based on theory). But the analysis reveals that for at least identical or even significantly higher price points (between 33% and 66% higher) a willingness to pay from the direct survey method. **Therefore, on the basis of the findings in this empirical study the theory regarding an overstatement of the attribute price combined with lower price points for direct surveys cannot be confirmed.**

With qualitative hypothesis 2, the authors' conclusion that the Extended Price Sensitivity Meter is appropriate for innovative product concepts should be examined. In the original article Miller, Newton and Smith (1993) pointed out the practicability of their new method in the early stages of development, before the parameters of the product are defined.

As discussed in chapter 7, an isolated view on the findings regarding willingness to pay may affirm the assumption of Miller, Newton and Smith. The gathered price points from both methods in this study are identical concerning the maximum willingness to pay.

But taking the output of the part-worth utility analysis into consideration a limitation of the Extended Price Sensitivity Meter must be mentioned, with regard to the pricing of innovative products.

By the use of this research method customer preferences on product features cannot be determined due to its design. Nevertheless, Lilien (2013) pointed out that the determination of customer preferences is an important factor in the product development process. Regarding this, the Conjoint Measurement would be the better alternative. (Gustafsson, A., Herrmann, A., Huber, F., 2007, p. 3)

Generally, qualitative hypothesis 2 “The Extended Price Sensitivity Meter is appropriate for innovative products” and thereby the argumentation of Miller, Newton and Smith is questionable regarding their method.

Based on the findings from the qualitative hypothesis test in this thesis, for a well-defined product or service (according to the customers’ needs) the Extended Price Sensitivity Meter may deliver usable results. But if the product design process is not completed this research method would be not applicable.

In qualitative hypothesis 5 the conclusion of Miller, Newton and Smith concerning the applicability of the Extended Price Sensitivity Meter only with respondents who do not have any preconceived price perception was analysed. The authors mention this as a limitation of their approach.

To examine the stated limitation, in this thesis sole owners of bus trailers were asked about willingness to pay regarding trailer concepts. The idea was to find out whether the Extended Price Sensitivity Meter also works with respondents who are aware about market prices.

The analysis concerning qualitative hypothesis 5 shows reasonable price points, gathered by the direct survey method. **Hence, from the findings with regard to the determined willingness to pay (qualitative hypothesis 5), one can say that the specified limitation of Miller, Newton and Smith cannot be confirmed. So their method should also be applicable at respondents who have knowledge about market price levels.**

8.2.2 Contribution to practise and management implications

From a practical point of view, the comparison should deliver useful information to marketers on the applicability of the Extended Price Sensitivity Meter, regarding pricing issues in commercial practise. Marketers should receive a first overview how this research method works, for example concerning the determination of willingness to pay including price-demand curves within a B2B environment, especially within the automotive industry.

To gather findings with knowledge contribution in practise the qualitative hypotheses 3 and 4 were constructed.

With qualitative hypothesis 3 the applicability of the Extended Price Sensitivity Meter to determine willingness to pay should be tested, as a worthwhile alternative method to the established Choice Based Conjoint Measurement approach. As discussed, the Conjoint Measurement is the most frequently used research approach concerning pricing issues. But this is a time-consuming and cost-intensive research method. Due to limited market research budgets, in commercial practise direct surveys like the Price

Sensitivity Meter by van Westendorp or the extension to this method by Miller, Newton and Smith became more popular. (Hofstetter, R., Miller, K., 2009, p. 33)

The analysis with regard to the maximum turnover delivers mixed results. For the Glass Fibre Assembly trailer concept identical price points could be identified from both research methods, but for the Sandwich Panel Assembly model different price points were found.

Based on the findings of the direct comparison in qualitative hypothesis 3, it can be anticipated that for the tested products the Extended Price Sensitivity Meter is not as equally powerful as the chosen Choice Based Conjoint Measurement.

However, a limitation of the empirical analysis in this thesis must be taken into consideration. The study was conducted in just one business segment with only two product concepts. Therefore, further research is recommended regarding other products, industries or business segments to examine the applicability (including the pros and cons) of the Extended Price Sensitivity Meter on a broader basis.

The idea of qualitative hypothesis 4 was to find out whether the Extended Price Sensitivity Meter is a practicable research method in commercial practise, especially within the B2B arena concerning products which are not self-explanatory.

To analyse this, a product concept with innovative features was tested in the bus and coach segment of the automotive industry. The innovative features had to be explained in detail to the respondents, in order to clarify the benefits or limitations of these. For instance the aerodynamic optimised body was described concerning its economic fuel saving benefit, with the limitation of a decreased storage compartment due to its shape.

Overall, the gathered data show that the Extended Price Sensitivity Meter delivers reasonable results with regard to willingness to pay for innovative products. Notably, either the price point for the respondents' maximum willingness to pay or the prices regarding the determined maximum turnover are identical.

Hence, these findings would be helpful for marketers in commercial practise to set an optimised market entry price, even for products which are not self-explanatory. **Therefore the Extended Price Sensitivity Meter could be a cost-effective alternative method to determine willingness to pay. In times of decreasing market research budgets it would be really beneficial for market researchers to have an efficient alternative solution.**

In the following, the limitations in this empirical study will be discussed including an outlook on further recommended research.

8.3 Limitations and future research

Generally speaking, the findings of the analysis may lead the reader to the assumption that the low-cost alternative Extended Price Sensitivity Meter delivers utilisable pricing results, which are comparable to a cost intensive method like the Choice Based Conjoint Measurement.

But, as a limitation of the study we have to take into consideration that this single empirical test cannot represent any findings for an entire technique. The applicability of the discussed direct research approach must be considered carefully. Based on the findings of the empirical study in this thesis, it can be remarked that for a defined and a well-described product the Extended Price Sensitivity Meter technique may deliver useful results concerning the determination of willingness to pay.

Nevertheless, there are some more limitations to the conducted study which encourage a need for further research. For instance, these may include the geographic region of the sample. The study has been carried out in Germany, France and Spain. All countries are located in Western Europe and have a comparable cultural context. In order to generalise the results, more studies involving countries from different cultural backgrounds are recommended.

Furthermore, the respondents in the survey come from the B2B sector. This was a consciously chosen sample, because of a particular lack of research concerning the application of the Extended Price Sensitivity Meter in the B2B segment. Wells (2010) described the automotive industry as one of the leading industries worldwide. As discussed in chapter 2, automotive

companies typically generate the major part of their profits with after sales services. (Loeffler, C., Schleifer, L., 2010, p. 191) Hence, due to the macroeconomic importance of the automotive industry and its after sales division as the main profit driver, the empirical study in this thesis was conducted in this business segment. However, it could be valuable to investigate the presented qualitative hypotheses on the basis of a B2C sample.

Supplementary, the findings should be generalised by varying the research object across different product categories. Backhaus, Voeth, Sichtmann and Wilken (2005) found out that the product category can have an influence on the results.

Another aspect concerning the empirical study in this thesis should be taken into consideration. The sample size in this thesis with sixty respondents in total could be considered as a minimum level, with regard to statistical robustness. Bigger samples typically reduce the risk of statistical errors (like the standard error). On the basis of the sample in this thesis, a standard error of 12.5% could be identified. Usually, a relative confidence interval of approximately 10% can be tolerated in commercial practise and viewed as an indicator regarding an acceptable sample. (Meissner, J., 2004, p. 460) Hence, it is recommended to re-test the research objectives ideally with a larger sample.

After this presentation of the study limitations and the need for further research, a final summary of the thesis will follow to sum up the major findings.

8.4 Summary

This dissertation deals with pricing and methods to measure the customers' willingness to pay, to set optimal market prices. The theoretical framework of the thesis was presented in chapter 1. To set the scene, first the research problem including the resulting need for research was derived, followed by an outline of the thesis.

Chapter 2 contains an overview of the considered industry within the case study. Here the importance of the automotive industry and the after sales business was illustrated in order to highlight why this industry segment was chosen. Today, the automotive industry is one of the world´s leading industries with a turnover of € 2 trillion in 2005 (only automobile manufacturing). (Wells, P., 2010, p. 2)

The consulting agency Deloitte (2007) found out that with only 10 per cent of the revenue between 50 and 60 per cent of the companies´ profits are generated by the after sales division. This underlines the importance of this business segment and gives the reason why this industry segment was chosen for the empirical study in this thesis.

Within chapter 3 the importance of pricing in the marketing mix and for a firm´s profit was described. From literature, we found out that price is one of

the most important parameters for determining a company's market share and/or profit. (Kotler, P., Armstrong, G., 2010, p. 314,)

"Recent developments in marketing show that pricing of products is driven by a value based approach." (Breidert, C., 2006, p. 131) Regarding a value based approach the price of a product is oriented to customer perceptions of value. (Kotler, P., Armstrong. G., 2010, p. 315)

In order to set an optimal (profit optimised) market price, it is essential to be aware of the customer's willingness to pay. (Meffert, H., et. al., 2008, p. 481, Kotler, P., Keller, K., 2006, p. 434, Wertenbroch, K., Skiera, B., 2002, p. 228) Today, market researchers can select between varieties of methods to determine willingness to pay. (Hofstetter, R., Miller, K., 2009, p. 8, Sattler, H., Nitschke, T., 2001, p. 2)

In chapter 4, the existing research methods were discussed including a view on the pros and cons of each technique. The most common research technique is the survey. (Zimmerman, A., Blythe, J., 2013, p. 97) With regard to pricing research, surveys can be generally differentiated into direct and indirect approaches. (Siems, F., 2009, p. 105)

In literature several comparisons between direct and indirect survey approaches concerning pricing issues exist, but with mixed results. Recent studies (Hofstetter and Miller, 2009; Voelckner, 2006; Satter and Nitschke, 2003) show that direct surveys are not mandatorily inferior to indirect surveys

regarding statistical robustness. (Roll, O., Achterberg, L., H., Herbert, K., G., 2010, p. 182)

Due to cost and time savings, in commercial practise direct research methods like the Price Sensitivity Meter by the Dutch economist Peter van Westendorp are of relative importance. (Roll, O., Achterberg, L., H., Herbert, K., G., 2010, p. 182, Reinecke, S., Muehlmeier, S., Fischer, P., 2009, p. 97) But, in literature the Price Sensitivity Meter is discussed critically regarding its impracticability to derive price-response functions (to calculate revenue and profit curves). (Roll, O., Achterberg, L. H., Herbert, K. G., 2010, p. 185)

In this thesis an extension to the traditional approach by van Westendorp, “A Market Acceptance Extension to Traditional Price Sensitivity Measurement” by Miller, Newton and Smith was tested concerning its appropriateness to evaluate willingness to pay.

This research method was derived in the early 1990´s (and has become more and more popular in commercial practise) to measure the customers’ willingness to pay. Due to its simplicity, combined with the possibility to determine price-response functions, it is regarded as an alternative research method to the more complex and cost-intensive Conjoint Measurement.

The findings of the empirical comparison regarding the applied pricing research methods were presented in chapter 7, along the constructed qualitative hypotheses. In the context of the qualitative hypothesis testing we found out that the direct research method delivers reasonable results, under

certain conditions. Limitations of this research approach could also be noticed.

Based on the findings in this thesis the (in literature) discussed hypothetical bias of the direct research method could not be found. The effect, that respondents are focused too much on price could not be identified.

The argument of the authors of the Extended Price Sensitivity Meter that their new method is applicable for innovative product concepts could not be confirmed completely. Due to its design, this research method cannot determine customer preferences concerning single product features. Regarding products which were designed according to the customers' needs, this method may be applicable. But if the product design process is not yet finished and features are still discussable, the Extended Price Sensitivity Meter could be limited and the Conjoint Measurement should the better alternative.

The analysis of the Extended Price Sensitivity Meter with regard to products which are not self-explanatory shows that this method delivers reasonable results. In times of decreasing research budgets in commercial practice this method could be an alternative to gathering market information for marketers to set the right market entry prices.

Miller, Newton and Smith pointed out that their new approach may be limited to respondents who do not have any preconceived price perceptions. Within the qualitative hypotheses testing, we found out that this statement cannot be

confirmed due to the findings of the study. All the participants in the study were already aware of market prices and they stated reasonable price points with regard to willingness to pay.

In summary we can remark that the Extended Price Sensitivity Meter by Miller, Newton and Smith can be considered as a cost-effective and practicable methodology within pricing research, particularly in price measurements.

But it also has limitations regarding pricing research for completely new product concepts. Therefore an analysis of the customers´ preference structure is usually required to define the product alternative the customers want / prefer which can be realised by the Conjoint Measurement approach.

As pointed out before, there has been no comparison found in literature of the Extended Price Sensitivity Meter with other research techniques so far. This research technique is still not in the focus of scientific publications. Therefore in this thesis, a direct empirical comparison of the Extended Price Sensitivity Meter with the (theoretically and practically) well-established Choice Based Conjoint Measurement regarding pricing issues was presented for the first time.

With regard to a contribution of knowledge concerning pricing issues, the findings in this thesis should be useful for researchers in theory and practise, especially concerning the applicability of the extension to the traditional Price Sensitivity Meter by Miller, Newton and Smith.

8.5 Final remarks

Within this final chapter the main conclusions of the thesis, with emphasis on the contribution to practise, will be summarised.

The focus of the thesis is on an in-depth analysis of a “new tool”, the Extended Price Sensitivity Meter. This research approach could be identified as a potential method to save cost in commercial practise – with regard to determining willingness to pay.

Based on the findings of the empirical study within the aftermarket of the automotive industry, the ability to use the Extended Price Sensitivity Meter as a cost-effective method to determine price response curves could be highlighted.

Moreover we identified that this research method can be used either for established or new products and it can be applied also for products which need explanation. Especially these conclusions refute the conclusions of the authors Miller, Newton and Smith in their original article to this method in (1993).

The findings within this thesis regarding the analysed research method Extended Price Sensitivity Meter are useful for marketers in commercial practise with regard to pricing issues. Beside the frequently used (but cost intensive) research approach Conjoint Measurement, a new tool was reviewed to determine willingness to pay.

As discussed before, these contributions to management practice can be seen to be applicable both to the automotive aftermarket and the automotive industry more generally. In this thesis a B2B (business to business) segment was analysed, but the findings can also be applicable for the consumer segment of the automotive industry (e.g. for passenger cars). The authors of the Extended Price Sensitivity Meter already tested their method within the consumer business at an example of the telecommunications industry.

The conclusions of this thesis should also be useful for marketers in other similar industries and indeed across diverse industries. For instance the finding within qualitative hypothesis 4 is valuable concerning products which are not self-explanatory like in the machine building industry.

The results of the analysis show that the Extended Price Sensitivity Meter by Miller, Newton and Smith is a worthwhile method in order to derive price-demand curves. With regard to limited marketing research budgets, this cost-effective approach is a good alternative to the established Conjoint Measurement.

9 References

Aamodt, M., 2012, Industrial / Organizational Psychology: An Applied Approach, 7th Edition, Wadsworth, Cengage Learning, Belmont

Abbott, M., McKinney, J., 2013 Understanding and Applying Research Design, Wiley & Sons, New Jersey

Acock, A., 2008 A gentle introduction to Stata, 2nd Edition, Stata Press, College Station

Adler, J., 2003, Anbieter- und Vertragstypenwechsel: Eine nachfrageorientierte Analyse auf Basis der Neuen Institutionenökonomik, Gabler, Wiesbaden

Albaum, G., Smith, S., 2012, Why People Agree to Participate in Surveys, in: Gideon, L., (Editor), Handbook of Survey Methodology for the Social Sciences, Springer, New York, pp. 179-193

Albers, S., Klapper, D., Konradt, U., Walter, A., Wolf, J., 2009, Methodik der empirischen Forschung, Gabler, Wiesbaden

Andrew, D., Pedersen, P., McEvoy, C., 2011, Research Methods and Design in Sport Management, Human Kinetics, Leeds

Arnold, R., 2013, Microeconomics, 11th Edition, South-Western Cengage Learning, Mason

Arnold, R., 2011, Macroeconomics, 10th Edition, South-Western Cengage Learning, Mason

Arthur D Little, 2008, Automotive After Sales 2015: Are you ready for the battle?, Automotive Insight

Asendorpf, J., 2007, Psychologie der Persönlichkeit, 4th Edition, Springer Medizin Verlag, Heidelberg

Auerbach, C. F., Silverstein, L., 2003, Qualitative Data: An Introduction to Coding and Analysis, New York University Press, New York/London

Baader, A., Montanus, S., Barkawi, R., 2006, Erfolgreich mit After Sales Services: Geschäftsstrategien für Servicemanagement und Ersatzteillogistik, Springer, Berlin/ Heidelberg/New York

Babbie, E., 2013 The Practice of Social Research, 13th Edition, Wadsworth Cengage Learning, Belmont

Backhaus, K., Erichson, B, Pinke, W., 2006, Multivariate Analysemethoden, 11th Edition, Springer, Berlin/ Heidelberg/ New York

Backhaus, K., Schneider, H., 2007, Strategisches Marketing, 3rd Edition, Schaeffer-Poeschel, Stuttgart

Backhaus, K., Sichtmann, C., Voeth, M., Wilken, R., 2005, Conjoint-Analyse versus Direkte Preisabfrage zur Erhebung von Zahlungsbereitschaften, in: Die Betriebswirtschaft, Vol. 65, No. 5, pp. 439-457

Baier, D., Brusch, M., 2009, Conjointanalyse: Methoden, Anwendungen, Praxisbeispiele, Springer, Berlin/Heidelberg/New York

Bajpai, N., 2010, Business Statistics, Pearson Education, Singapore

Baker, M.J., Hart, S., 2003, The marketing book, 6th Edition, Butterworth-Heinemann, Oxford

Baker, W., Marn, M., Zawada, C., 2010, The Price Advantage, John Wiley & Sons, New Jersey, 2010

Balderjahn, I., 2003, Erfassung der Preisbereitschaften, in: Diller, H., Herrmann, A., (Editors), Handbuch Preispolitik: Strategien- Planung- Organisation- Umsetzung, Gabler, Wiesbaden, pp. 387-404

Balderjahn, I., Hedergott, D., Peyer, M., 2009, Choice-Based Conjointanalyse, in: Baier, D.; Brusch, M. (Editors), Conjointanalyse, Berlin/ Heidelberg/ New York, pp. 129-146

Barkawi Management Consultants, 2013, Service Business: After Sales and product related services help OEM companies realize revenue and profit potentials

Bartlett, J. E., Kotrlik, J., Higgins, C., 2001, Organizational Research: Determining Appropriate Sample Size in Survey Research, in: Information Technology, Learning, and Performance Journal, Vol. 19, No. 1, pp. 43-50

Basu, A., Sioya, H., Park, C., 2011, Statistical Inference: The Minimum Distance Approach, Chapman & Hall CRC, Boca Raton

Baumgarten, J., Wuebker, G., 2008, Price your way to smart profit growth,in: Journal of professional pricing (Third quarter), pp. 22-27

Baumol, W., Blinder, A., 2011, Macroeconomics, Principles and Policy, 11th Edition, South-Western, Cengage Learning, Mason

Begg, D., Fischer, S., Dornbusch, R., 2008, Economics, 9th Edition, McGraw-Hill Higher Education, New York

Berekoven, L., Eckert, W., Ellenrieder, P., 2006, Marktforschung, 11th Edition, Gabler, Wiesbaden

Berekoven, L., Eckert, W., Ellenrieder, P., 2009, Marktforschung: Methodische Grundlagen und praktische Anwendung, 12th Edition, Gabler, Wiesbaden

Bernard, R., 2011, Research Methods in Anthropology: Qualitative and Quantitative Approaches, 5th Edition, Rowman & Littlefield Publishers, Alta Mira Press, Plymouth

Berndt, R., 2004, Marketingstrategie und Marketingpolitik, 4th Edition, Springer, Berlin/ Heidelberg/New York

Berndt, R., Fantapié Altobelli, C., Sander, M.,2005, Internationales Marketing-Management, 3rd Edition, Springer, Heidelberg/Berlin

Besanko, D., Braeutigam, R., 2010, Microeconomics, 4th Edition, John Wiley & Sons, New Jersey

Billige, M., Brook, A., Darlington, N., Smith, D., 2010, How prepared are English universities for a more deregulated undergraduates tuition fees environment?, Simon, Kucher and Partners, White Paper, Bonn

Bitonto, S., Kolbe, M., McDougall, W., 2012, The Automotive Industry in Germany: Issue 2012/2013, Germany Trade and Invest (Publisher), Berlin

Black, K., 2012, Business Statistics: For Contemporary Decision Making, 7th Edition, John Wiley & Sons, New Jersey

Blythe, J., 2008, Essentials of Marketing, 4th Edition, Pearson Education, Essex

Bloom, B., 2006, Summary health statistics for U.S. children: National health interview survey 2004, National Center for Health Statistics

Boehler, H., Scigliano, D., 2009, Taditionelle Conjointanalyse, in: Baier, D.; Brusch, M. (Editors), Conjointanalyse, Berlin/ Heidelberg/ New York, pp. 101-112

Boyes, W., Melvin, M., 2012, Microeconomics, 9th Edition, South-Western Cengage Learning, Mason

Boyes, W., Melvin, M., 2012, Microeconomics, 9th Edition, South-Western Cengage Learning, Mason

Brassington, F., Pettitt, S., 2006, Principles of marketing, 4th Edition, Pearson Education, Essex

Brede, H., 2004, Betriebswirtschaftslehre, 8th Edition, Oldenbourg, Munich

Breidert, C., 2006, Estimation of Willingness-to-Pay, Gabler, Wiesbaden

Breidert, C., Hahsler, M., Reutterer, T., 2006, A Review of Methods for Measuring Willingness-To-Pay, in: Innovative Marketing, Vol. 2, No. 4, pp. 8-32

Brent, R.J., 2008, Applied Cost-benefit Analysis, 2nd Edition, Edward Elgar Publishing, Cheltenham

Brigham, E., Houston, J., 2012, Fundamentals of Financial Management, Concise 7th Edition, South-Western Cengage Learning, Mason

Broda, S., 2006, Marktforschungs-Praxis: Konzepte, Methoden, Erfahrungen, Gabler, Wiesbaden,

Brosius, F., 2011, SPSS 19, Hüthig Jehle Rehm, Heidelberg/ Munich/ Landsberg/ Frechen/ Hamburg

Bruhn, M., 2007, Marketing, 8th Edition, Gabler, Wiesbaden, 2007

Buecker, R., 2003, Statistik für Wirtschaftswissenschaftler, 5th Edition, Oldenbourg, Munich, 2003

Buhalis, D., Costa, C., 2006, Tourism Management Dynamics, Elsevier Butterworth-Heinemann, Oxford

Bullinger, H. J., van Husen, C., 23006, Aktuelle Chancen und Trends im Servicegeschäft, in: Erfolgreich mit After Sales Services: Geschäftsstrategien für Servicemanagement und Ersatzteillogistik, Barkawi, K., Baader, A., Montanus, S., (Editors), Springer, Berlin/ Heidelberg/ NewYork, pp. 17-36

Butscher, S., 2006, It’s the price, stupid, in: Publishing News, March 31, p. 10

Carbaugh, R. J., 2010, International Economics, 13th Edition, South-Western Cengage Learning, Mason

Carducci, B., 2009, The Psychology of Personality: Viewpoints, Research, and Applications, 2nd Edition, John Wiley & Sons, West Sussex

Carroll Mohn, N., 1995, Pricing Research for Decision Making (When setting prices, don't rely on judgment alone.), in: Journal of Marketing Research, Vol. 7, No. 1, pp. 11-19

Case, K., Fair, R., Oster, S., 2009, Principles of Macroeconomics, 9th Edition, Pearson Education, Upper Saddle River, New Jersey

Cassillas, J., Martinez Lopez, F., 2010, Marketing Intelligent Systems Using Soft Computing: Managerial and Research Applications, Springer, Berlin/ Heidelberg

Chang, W-C., Chen, J., Xu, X.,, 2007, An overview of research on revenue management: current issues and future research, in: International Journal of Revenue Management, Vol. 1, No. 1, pp. 97-128

Chapman, C., Alford, J., Johnson, C., Weideman, R., Lahav, M., 2009, CBC vs. ACBC: Comparing Results with Real Product Selection, Sawtooth Software Technical Paper Series

Child, D., 2006, The Essentials of Factor Analysis, 3rd Edition, Continuum International Publishing Group, New York

Creswell, J. W., 2009, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 3rd Edition, Sage Publications Inc., Thousand Oaks

Chrzan, K., 2011, Overview of Pricing Research, Research White Paper, Maritz Research

Chrzan, K., Orme, B., 2000, An Overview of Design Strategies for Choice Based Conjoint Analysis, Sawtooth Software Research Paper Series

Clifton, M., Bird, H., Albano, R., Townsend, W., 2004, Target Costing, Market-Driven Product Design, Marcel Dekker Inc., New York

Cohen, L., Manion, L., Morrison, K., 2011, Research Methods in Education, 7th Edition, Routledge, Oxon/ New York

Cohen, L., Manion, L., Morrison, K., 2007, Research Methods in Education, 6th Edition, Routledge, New York, 2007

Cram, T., 2006, Smarter Pricing: How to Capture More Value In Your Market, Pearson Education, Harlow

Crane, F., 2009, Marketing for Entrepreneurs: Concepts and Applications for New Ventures

Cressman, G. E., 1997, Snatching Defeat From the Jaws of Victory, Why do good managers make bad pricing decisions?, in: Marketing Management, Vol. 6, Summer, pp. 8-19

Crouch, S., Housden, M., 2003, Marketing Research for Managers, 3rd Edition, Butterwoth Heinemann, Oxford

Czaja, R., Blair, J., 2005, Designing Surveys: A Guide to Decisions and Procedures, 2nd Edition, Sage Publications, London

Dattalo, P., 2008, Determining Sample Size: Balancing Power, Precision, and Practicality, Oxford University Press, Oxford/New York

Deepashree, 2008, Principles of Economics, Tata McGraw-Hill, New Delhi

Diez, W., 2012, Die internationale Wettbewerbsfähigkeit der deutschen Automobilindustrie: Herausforderungen und Perspektiven, Oldenbourg, Munich

Diller, H., 2008, Preispolitik, 4th Edition, Kohlhammer, Stuttgart

Ding, M., Ross, W., Rao, V., 2010, Price as an Indicator of Quality: Implications for Utility and Demand Functions, in: Journal of Retailing Vol. 86, No. 1, New York, pp. 69-84

Dombrowski, U., Engel, C., Schulze, S., 2011, Scenario Management for Sustainable Strategy Development in the Automotive Aftermarket, in: Functional Thinking for Value Creation, Proceedings of the 3rd CIRP International Conference of Industrial Product Service Systems, Hesselbach, J., Herrmann, C., (Editors), Springer, Berlin, Heidelberg

Domino, G., Domino, M., 2006, Psychological Testing: An Introduction, 2nd Edition, Cambridge University Press, Cambridge

Dwivedi, D. N., 2008, Microeconomics, Theory & Applications, 2nd Edition, Dorling Kindersley, Delhi

Eckey, H.-F., Kosfeld, R., Türck, M., 2008, Deskriptive Statistik: Grundlagen - Methoden - Beispiele, 5th Edition, Gabler, Wiesbaden

Ewert, R., Wagenhofer, A., 2005, Interne Unternehmensrechnung, 7th Edition, Springer, Heidelberg/Berlin

Fabian, S., 2005, Wettbewerbsforschung und Conjoint-Analyse: Bestimmung der Präferenzen von Managern mittels Conjoint-Analyse zur Erklärung ihres Verhaltens im Wettbewerb, insbesondere ihres Reaktionsverhaltens bei Konkurrenzaktionen, Gabler, Wiesbaden

Fain, J., A., 2013, Reading, Understanding, and Applying Nursing Research, 4th Edition, F.A. Davis Company, Philadelphia

Fantapié Altobelli, C., 2007, Marktforschung: Methoden - Anwendungen – Praxisbeispiele, Lucius & Lucius, Stuttgart

Farace, V., 2008, What Should We Charge? Setting Price, Working Paper Satisfaction Management Systems

Fink, A., 2006, How to Conduct Surveys: A Step-by-Step Guide, Sage Publications, London

Forsyth, P., 2009, Marketing, A guide to the fundamentals, The Economist Newspaper Ltd., New York

Frank, R., 2010, Microeconomics and behavior, 8th Edition, McGraw-Hill, Irwin

Frank, R., Bernanke, B., 2004, Principles of Economics, 2nd Edition, McGraw-Hill, New York

Gaedeke, O., Schubert, A., Melles, T.2003, Entwicklung von Finanzprodukten – mehr als nur eine Conjoint-Analyse, in: planung & analyse, Vol. 3, pp. 34-41

German Association of the Automotive Industry, 2012, Annual Report 2012, German Association of the Automotive Industry

Gieseking, T., 2009, Gewinnoptimale Preisbestimmung in werbefinanzierten Märkten: Eine conjoint-analytische Untersuchung eines Publikums-zeitschriftenmarktes, Gabler, Wiesbaden

Gliner, J., Morgan, G., Leech, N., 2009, Research Methods in Applied Settings: An Integrated Approach to Design and Analysis, 2nd Edition, Routledge, New York

Goffin, K., Lemke, F., Koners, U., 2010, Identifying Hidden Needs: Creating Breakthrough Products, Palgrave MacMillan, Basingstoke/ New York

Goodin, C., 2008, Clear and Present Value: Retailers can boost profits by replacing a product-centric view of pricing with a customer-centric approach, in: Retail Merchandiser, January/February

Goodwin, C., 2009, Research In Psychology: Methods and Design, John Wiley & Sons, New Jersey

Götze, W., Deutschmann, C., Link, H., 2002, Statistik: Lehr- und Übungsbuch mit Beispielen aus der Tourismus- und Verkehrswirtschaft, Oldenbourg, Munich, 2002

Grant, R. M., 2010, Contemporary Strategy Analysis, 7th Edition, John Wiley & Sons, New Jersey

Gravetter, F., Wallnau, L., 2012, Essentials of Statistics for The Behavioral Sciences, 8th Edition, Cengage Learning, Mason

Green, P., Krieger, A., Wind, Y., 2001, Thirty Years of Conjoint Analysis: Reflections and Prospects, in: INTERFACES, Vol. 31, No. 3, Part 2, May/June, pp. S56-S73

Green, P., Srinivasan, V., 1990, Conjoint analysis in marketing, in: Journal of Marketing, pp. 3-19

Griffiths, A., Wall, S., 2008, Economics for business and management, 2nd Edition, Pearson Education, Essex

Groth-Marnat, G., 2009, Handbook of Psychological Assessment, 5th Edition, John Wiley & Sons, New Jersey

Grover, R., Vriens, M., 2006, The Handbook of Marketing Research: Uses, Misuses, and Future Advances, Sage Publications, London

Guoqiang Tian, 2013, Lecture Notes: Microeconomic Theory, at the Department of Economics Texas A&M University College Station, Texas

Gustafsson, A., Herrmann, A., Huber, F., 2007, Conjoint Analysis as an Instrument of Market Research Practice, in: Gustafsson, A., Herrmann, A., Huber, F. (Editors), Conjoint Measurement – Methods and Applications, 4th Edition, Springer, Berlin/Heidelberg/New York, pp. 3-30

Gwartney, J., Stroup, R., Russell S. Sobel, R., 2010 Macroeconomics: Private and Public Choice, 13th Edition, South-Western Cengage Learning, Mason

Hague, N., 2004, The problem with price, A White Paper of B2B International Market Research

Hall, R., 2008, Potential Competition, Limit Pricing, and Price Elevation from Exclusionary Conduct, in: Issues in Competition and Policy, Vol. 1, No. 433, ABA Section of Antitrust Law, pp. 433-448

Hall, R., Liebermann, M., 2012, Economics: Principles & Applications, 6th Edition, South-Western Cengage Learning

Han, S., Gupta, S., Lehmann, D. T., 2001, Consumer Price Sensitivity and Price Threshold, in: Journal of Retailing, Volume 77, Issue 4, pp. 435–456

Harmon, R., Raffo, D., Faulk, S., 2003, Value-Based Pricing For New Software Products: Strategy Insights for Developers, in: Management of Engineering and Technology, PICMET '03, Technology Management for Reshaping the World, Portland International Conference

Hartmann, A., 2004, Kaufentscheidungsprognose auf Basis von Befragungen: Modelle, Verfahren und Beurteilungskriterien, Gabler, Wiesbaden

Hartmann, A., Sattler, H., 2002, Wie robust sind Methoden zur Praeferenzmessung, Research Papers on Marketing and Retailing, at the University of Hamburg, No. 4

Heidbrink, M., 2006, Reliabilität und Validität von Verfahren der Präferenzmessung: Ein meta-analytischer Vergleich verschiedener Verfahren der Conjoint-Analyse, University of Muenster

Hellhammer, S., 2007, Marketingforschung im Luxussegment: Mechanismen, Märkte und Methoden, University of Madgeburg/Halle

Helm, R., Steiner, M., 2008, Präferenzmessung: methodengestützte Entwicklung zielgruppenspezifischer Produktinnovationen, Kohlhammer, Stuttgart

Helm, R., Steiner, M., Scholl, A., Manthey, L., 2004, Measuring Customer Preferences in New Product Development: Comparing Compositional and Decompositional Methods, in: International Journal of Product Development, Vol. 1, No. 1, pp. 12-29

Herr, S., Oswald-Chen, F., Ying Yang, 2007, Effective Pricing Strategies for Foreign and Chinese Companies, in: Hofer, M., Ebel, B., (Editors), Business Success in China, Springer, Berlin/ Heidelberg, pp. 119-130

Herrmann, A., Huber, F., Rieger, S., 2009, Adaptive Conjointanalyse, in: Baier, D.; Brusch, M. (Editors), Conjointanalyse, Berlin/ Heidelberg/ New York, pp. 113-128

Herrmann, C., 2010, Ganzheitliches Life Cycle Management, Springer, Heidelberg/Dordrecht/London/New York

Hill, E., O´Sullivan, C., O´Sullivan, T., 2003, Creative arts marketing, 2nd Edition, Butterworth-Heinemann, Oxford

Hillig, T., 2006, Verfahrensvarianten der Conjoint-Analyse, zur Prognosen von Entscheidungsvarianten, Gabler, Wiesbaden

Hinton, P., Brownlow, C., McMurray, I., Cozens, B., 2004, SPSS Explained, Routledge, East Sussex, New York

Hirschey, M., 2009, Managerial Economics, 12th Edition, South-Western Cengage Learning, Mason

Hirshleifer, J., Glazer, A., Hirshleifer, D., 2005, Price Theory And Applications: Decisions, Markets, and Information Cambridge University Press, New York

Hofer, M., 2003, Absatzprognose und Marktsimulation in der Automobilindustrie, Gabler, Wiesbaden

Hofstetter, R., Miller, M., 2009, Measuring Consumers' Willingness to Pay. Do Direct Approaches Really Work?, in: Miller, K, Hofstetter, R., (Editors), Precision Pricing, Measuring consumers´ willingness to pay accurately, Books on demand, Norderstedt

Hoeölzle, K., 2009, Die Projektleiterlaufbahn: Organisatorische Voraussetzungen und Instrumente für die Motivation und Bindung von Projektleitern, Gabler, Wiesbaden

Homburg, C., 2004, Pricing excellence : Wegweiser für ein professionelles Preismanagement, Institut für Marktorientierte Unternehmensführung, University of Mannheim

Homburg, C., Jensen, O., Schuppar, B., 2004, Pricing Excellence – Wegweiser fuer ein professionelles Preismanagement, University of Mannheim, Management Know-How, No. M 90

Homburg, C., Kuester, S., Krohmer, H., 2009, Marketing Management, A Contemporary Perspective, McGraw-Hill Higher Education, Berkshire

Hoy, W., 2010, Quantitative research in education: A Primer, Sage Publications, Tousand Oaks

Hutzschenreuter, T., 2009, Allgemeine Betriebswirtschaftslehre: Grundlagen mit Praxisbeispielen, 3rd Edition, Gabler, Wiesbaden

International Labour Office, 2010, The Global Economic Crisis, Sectoral Coverage, Automotive Industry: Trends and reflections, International Labour Office Geneva

Ison, S., Wall, S., 2011, Economics, 4th Edition, Pearson Education, Essex, 2007

Jackson, S., 2011, Research Methods and Statistics: A Critical Thinking Approach, 4th Edition, Wadsworth Cengage Learning, Belmont

Jedidi, K., Jagpal, S., Manchada, P., 2003, Measuring Heterogeneous Reservation Prices for Product Bundles, in: Marketing Science, Vol. 22, No. 1, pp. 107-130

Johnson, H., Ollus, N., Nevala, S., 2008, Violence Against Women: An International Perspective, Springer, New York

Kaas, K.P., Rupprecht, H., 2006, Are the Vickrey Auction and the BDM Mechanism really incentive compatible? – Empirical results and optimal bidding strategies in cases of uncertain willingness to pay, in: Schmalenbach Business Review, Vol. 58, pp. 37-55

Kaplan, R., Saccuzzo, D., 2012, Psychological Testing: Principles, Applications, & Issues, Wadsworth Cengage Learning, Belmont

Keller, K., Lehman, D., 2006, Brands and Branding: Research findings and future priorities, in: Marketing Science, Vol. 25, No. 6, pp. 740–759

Kepper, G., 2008, Methoden der qualitativen Marktforschung, in: Herrmann, A., Homburg, C., Klarmann, M., (Editors), Handbuch Marktforschung – Methoden, Anwendungen, Praxisbeispiele, 3rd Edition, Gabler, Wiesbaden

Kim, J., 2003, Limit Pricing Through Entry Regulation, in: Hitotsubashi Journal of Economics, Vol. 44, Issue 1, pp. 1-13

King, S., Gans, J., Stonecash, R., Mankiw, N. G., 2011, Principles of Macroeconomics, 5th Edition, South-Western Cengage Learning, Mason

Klein, M., 2002, Die Conjoint-Analyse: Eine Einführung in das Verfahren mit einem Ausblick auf mögliche sozialwissenschaftliche Anwendungen, in: ZA-Information, No. 50, Zentralarchiv für Empirische Sozialforschung, University of Cologne, pp. 7-45

Kleindorfer, P., Szirmay, Z., 2009, Pricing practice in the postal industry: Current approaches and challenges under liberalization, INSEAD Working Paper Series

Koch, J., 2004, Marktforschung: Begriffe und Methoden, 4th Edition, Oldenbourg, Munich

Komender, P., 2007, Gewinnorientierte Preisverhandlungen in Japan, in: Bellmann, K., Haak, R., (Editors), Der japanische Markt, Deutscher Universitaets Verlag, Wiesbaden, pp. 129-138

Koschate, N., 2002, Kundenzufriedenheit und Preisverhalten, Deutscher Universitäts-Verlag, Wiesbaden

Kotler, P., Armstrong, G., et.al., 2008, Principles of Marketing, 5th European Edition, Pearson Education, Essex

Kotler, P., Armstrong, G., Wong, V., Saunders, J., 2008, Principles of Marketing, 5th European Edition, Pearson Education, Essex

Kotler, P., et. al., 2005, Principles of marketing, 4th European Edition, Pearson Education, Essex

Kotler, P., Keller, K., 2006, Marketing Management, 12th Edition, Pearson Prentice Hall, Upper Saddle River, New Jersey

Krug, W., Nourney, M., Schmidt, J., 2001, Wirtschafts- und Sozialstatistik: Gewinnung von Daten, 6th Edition, Oldenbourg, Munich

Kunz, V., 2004, Rational Choice, Campus, Frankfurt/M.

Kuss, A., 2012, Marktforschung: Grundlagen der Datenerhebung und Datenanalyse, 4th Edition, Springer Gabler, Wiesbaden

Kuss, A., Kleinaltenkamp, M., 2009, Marketing Einfuehrung, 4th Edition, Gabler, Wiesbaden, 2009

Lamb, C., W., Hair, J. F., McDaniel Jr., C., 2008, Marketing, South-Western, Cengage Learning, Mason

Lamb, C., W., Hair, J. F., McDaniel Jr., C., 2008, Marketing, 10th Edition, South-Western Cengage Learning, Mason

Lauszus, D., Hofer, M., 2004, Conjoint Measurement als Instrument der Automobilmarktforschung, in: Ebel, B., Hofer, M., Al-Sibai, J., (Editors), Automotive Management: Strategie und Marketing in der Automobilwirtschaft, Springer, Berlin/ Heidelberg/ New York, pp. 203-219

Lehman, A., 2005, Jmp For Basic Univariate And Multivariate Statistics: A Step-by-step Guide, SAS Institute, Cary

Lehmann, S., Draisbach, T., Coll, C., Buxmann, P., Diefenbach, H.., 2010, Preisgestaltung für Software-as-a-Service: Ergebnisse einer empirischen Analyse mit Fokus auf nutzungsabhängige Preismodelle, Proceedings zur Teilkonferenz ‘‘Software-Industrie‘‘ der Multikonferenz Wirtschaftsinformatik (MKWI)

Leong, F., Austin, J., 2006, The Psychology Research Handbook: A Guide for Graduate Students and Research Assistants, 2nd Edition, Sage Publications, London

Lewis, R. Shoemaker, S., 1997, Price-sensitivity measurement: A tool for the hospitality Industry, in: Cornell Quarterly Hotel and Restaurant Administration, Vol. 38, No.2, pp.44-54

Lieberman, M., 2009, Use the correct set of tools to make sure the price is right, in: Admap, pp. 46-48

Lienert, G., Raatz, U., 1998, Testaufbau und Testanalyse, 6th Edition, Psychologie Verlags Union, Weilheilm

Litwin, M., Fink, A., 1995, How to Measure Survey Reliability and Validity, Sage Publications, London

Loeffler, C., Schleifer, L., 2010, Akzeptanz von internet-driven After Sales Services in der Automobilbranche, in: Multikonferenz Wirtschaftsinformatik, Universitäts Verlag, Goettingen, pp. 949-960

Louviere, J., Eagle, T., Cohen, S., 2005, Conjoint Analysis: Methods, Myths and Much More, Centre for the Study of Choice (CenSoC), University of Technology, CenSoC Working Paper No. 05-001, Sydney

Lusk, J., Shogren, J., 2007, Experimental Auctions: Methods and Applications in Economic and Marketing Research, Cambridge University Press, Cambridge

Lyon, D. W., 2002, The Price Is Right (or is it?), in: Journal of Marketing Research, pp. 8-13

Mandal, K. R., 2007, Microeconomic Theory, Atlantic Publishers & Distributers, New Delhi

Mankiw, N. G., Taylor, M., 2011, Principles of Economics, 6th Edition, South-Western Cengage Learning, Mason

Mankiw, N.G., Tayler, M., 2008, Grundzuege der Volkswirtschaftslehre, 4th Edition, Schaeffer Poeschel, Stuttgart

Marn, M., Roegner, E., Zawada, C., 2003a, The power of pricing, McKinsey Quarterly, No. 1, pp. 27-36, McKinsey & Company

Marn, M., Roegner, E., Zawada, C., 2003b, Pricing New Products, McKinsey Quarterly, No. 3, pp. 40-49, McKinsey & Company

Marn, M., Rosiello, R., 1992, Managing price, gaining profit, in: Harvard Business Review, pp. 84-94, September/ October

Martens, J., 2003, Statistische Datenanalyse mit SPSS für Windows, 2nd Edition, Oldenbourg, Munich

Matthews, P., 2010, Sample Size Calculations: Practical Methods for Engineers and Scientists, Mathews Malnar and Bailay Inc., Fairport Harbor

Maxwell, S., 2008, The Price is wrong: Understanding what makes a price seem fair and the true cost of unfair pricing, John Wiley & Sons, New Jersey

McAfee, R., McMillan, J., 1987, Auctions with Entry, in: Economics Letters, Vol. 23, pp. 343-347

McBurney, D., White, T., 2010, Research Methods, 8th Edition, Wadsworth Cengage Learning, Belmont

McEachern, W., 2011, Economics, A Contemporary Introduction, 9th Edition, South-Western Cengage Learning, Mason

McNeill, R., 2005, Business to Business Market Research: Understanding and Measuring Business Markets, Kogan Page, London

McQuarrie, E., 2006, The Market Research Toolbox: A Concise Guide for Beginners, 2nd Edition, Sage Publications, London

Meffert, H., Burmann, C., Kirchgeorg, M., 2008, Marketing, 10th Edition, Gabler, Wiesbaden

Meierbeck, R., Grossmann, S., 2012, Vom “Enabler“ zum "Driver“ – Das DMDC-Konzept von BMW als Paradigmenwechsel in der Ersatzteillogistik, in: Goepfert, I., Brown, D., Schulz, M., (Editors), Automobillogistik: Stand und Zukunftstrends, Springer Gabler, Wiesbaden, pp. 292-310

Meyer, M., Reutterer, T., 2009, Sampling-Methoden in der Marktforschung: Wie man Untersuchungseinheiten auswählen kann, in: Buber, R., Holzmueller, H., Qualitative Marktforschung: Konzepte - Methoden – Analysen, 2nd Edition, Gabler, Wiesbaden, pp. 229-246

Miller, G., Yang, K., 2007, Handbook of Research Methods in Public Administration, 2nd Edition, Auerbach Publications, Boca Raton

Miller, J., Newton, D., Smith, P., 1993, A market acceptance Extension to Traditional Price Sensitivity Measurement, presented at: Proceedings of the American Marketing Association Advanced Research Techniques Forum

Monroe, K., 2003, Pricing, 3rd Edition, McGraw-Hill School Education Group, New York

Moore, D., 2010, The Basic Practice of Statistics, 5th Edition, W.H. Freeman and Company, New York

Moser, K., 2007, Wirtschaftspsychologie, Springer, London

Mueller, H., 2008, Empirische Untersuchung zur Messung der Preiswahrnehmung mittels Pricesensitivity Meter, FEMM Working Paper, No. 29

Mueller, H., 2006, Der Preis als Qualitätsindikator – Experimentelle Untersuchungen auf Basis des Konzepts der Buy-Response-Curve, FEMM Working Paper, No. 8

Mukherjee, S., 2005, Modern Economic Theory, Revised 4th Edition, New Age International, New Delhi

Musiol, G., Kuehling, C., 2009, Kundenbindung durch Bonusprogramme, Springer, Berlin/Heidelberg

Mwape, B., Mumba, J., 2012, Tools for Policy Research, Author House, Bloomington

Nagle, T., Hogan, J., 2006, The Strategy and Tactics of Pricing: A Guide to Growing More Profitably, Pearson Prentice Hall, Upper Saddle River, New Jersey

Neubauer, W., Rudow, B., 2012, Trends in der Automobilindustrie, Oldenbourg, Munich

New Westphalia Newspapers, 2013, Mit dem Fahrradbus in die Radsaison starten, http://www.nw-news.de/owl/kreis_hoexter/ warburg/warburg/84139 262013, [accessed May, 1st 2013]

Nitschke, T., Sattler, H., 2001, Ein empirischer Vergleich von Instrumenten zur Erhebung von Zahlungsbereitschaften, Research Papers on Marketing and Retailing, University of Hamburg, No. 1

O´Donoghue, P., 2010, Research Methods for Sports Performance Analysis, Routledge, Oxon

Olbrich, R., 2006, Marketing, 2nd Edition, Springer, Berlin/ Heidelberg

Olbrich, R., Battenfeld, D., 2007, Preispolitik, Ein einführendes Lehr- und Übungsbuch, Springer, Berlin/ Heidelberg/ NewYork

Organisation Internationale des Constructeurs d'Automobiles, 2007, The World's Automotive Industry: Some Key Figures

Orme, B., 2009, Which Conjoint Method Should I Use?, Technical Papers Sawtooth Software Inc.

Orme, B., 2010, Sample Size Issues for Conjoint Analysis, in: Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research, 2nd Edition, Research Publishers, Madison

Orme, B., Johnson, R., Otter, T., 2008, Adaptive Choice Based Conjoint, ART Forum, Asheville, North Carolina

Ostthueringer Newspapers, 2013, Saisonstart für Fahrradbusse im Landkreis Saalfeld-Rudolstadt, http://saalfeld.otz.de/web/lokal/leben/detail/-/specific/Saisonstart-fuer-fahrradbusse, [accessed, May, 1st 2013]

Panneerselvam, R., 2007, Design and Analysis of Algorithms, Prentice Hall of India, New Delhi

Parkin, M., Powell, M., Matthews, K., 2007, Economics, 7th Edition, Pearson Education, Essex

Parrott, S., Mirabile, R., Scholder, T., 2008, How Much are Your Students Willing to Pay?, Testing Institutional Price Sensitivity, Maguire Associates

Pechtl, H., 2005, Preispolitik, Lucius & Lucius, Stuttgart

Peck, R., Devore, J., 2012, Statistics: The Exploration & Analysis of Data: The Exploration and Analysis of Data, 7th Edition, Brooks/Cole, Boston

Pepels, W., 2007, After Sales Service - Geschäftsbeziehungen profitabel gestalten, 2nd Edition, Düsseldorf

Peter, J., Donelly, J., 2003, A preface to marketing management, 9th Edition, McGraw Hill, New York

Pett, M., Lackey, N., Sullivan, J., 2003, Making sense of factor analysis: The use of factor analysis for instrument development in health care research, Sage Publications, Thousand Oaks/ London/ New Delhi

Pflaum, D., 2007, Die Kommunikationspolitik im After Sales Service, in: Pepels, W. (Editor), After Sales Service - Geschäftsbeziehungen profitabel gestalten, 2nd Edition, Düsseldorf

Piller, F. T., Hoenigschmid, F., Mueller, F., 2002, Individualität und Preis: Eine empirische Untersuchung zu Preissensibilität und Zahlungsbereitschaft bei Mass-Customization-Produkten, Arbeitsbericht Nr. 28 des Lehrstuhls für Allgemeine und Industrielle Betriebswirtschaftslehre der Technischen University of Munich

Pindyck, R., Rubinfeld, D., 2009, Mikroökonomie, 7th Edition, Pearson Studium, Munich

Piros, C., Pinto, J., 2013, Economics for Investment Decision Makers: Micro, Macro, and International Economics, John Wiley & Sons, Hoboken, New Jersey

Png, I., Lehman, D., 2007, Managerial Economics, 2nd Edition, John Wiley & Sons, New Jersey

Poynter, R., 2010, The Handbook of online and social media research: Tools and techniques for market researchers, John Wiley & Sons, West Sussex

Pride, W. M., Hughes, R.J., Kapoor, J., 2008, Business, 10th Edition, South-Western Cengage Learning, Mason

Pride, W., Ferrell, O., Lukas, B., Schembri, S., Niininen, O., 2012, Marketing Principles, 1st Edition, Cengage Learning Australia, Sydney

Raab, G., Unger, A., Unger, F., 2009, Methoden der Marketing Forschung: Grundlagen und Praxisbeispiele, Gabler, Wiesbaden

Rao, V., 2009, Handbook of Pricing Research in Marketing, Edward Elgar Publishing, Cheltenham

Rao, V., 2007, Developments in Conjoint Analysis, in: Wierenga, B., (Editor), Handbook of Marketing Decision Models, Springer Science and Business Media, New York, pp. 23-53

Reinecke, S., Muehlmeier, S., Fischer, P., 2009, Die van Westendorp Methode: Ein zu Unrecht vernachlaessigtes Verfahren zur Ermittlung der Zahlungsbereitschaft, in: Wirtschaftswissenschaftliches Studium, University of St. Gallen, Vol. 38, No. 2, pp. 97-100

Ridenour, C., Newman, I., 2008, Mixed Methods Research: Exploring the Interactive Continuum, Southern Illinois University Press, Carbondale

Roll, O., Achterberg, L. H., Herbert, K. G., 2010, Innovative approaches to analyzing the Price Sensitivity Meter: Results of an international comparative study, in: Riihelä, T., Mattila, M., (Editors), Combi2010 Conference Proceedings, Contemporary views on business: Partnering for the future, Helsinki, pp. 180-193

Rosenbloom, B., 2013, Marketing Channels: A Management View, 8th Edition, South-Western Cengage Learning, Mason

Roth, S., 2006, Preismanagement fuer Leistungsbuendel Preisbildung, Buendelung und Delegation, Deutscher Universitaets Verlag, Wiesbaden

Rubin, A., Babbie, E., 2012, Essential Research Methods for Social Work, 3rd Edition, Brooks/Cole Cengage Learning, Belmont

Rullkoetter, L., 2008, Preismanagement, Ein Sorgenkind?, in: Controlling and Management, Vol. 52, No. 2, pp. 92-98

Rutstroem, E., 1998, Home-Grown Values and Incentive Compatible Auction Design, in: International Journal of Game Theory, Vol. 27, No. 3, pp. 427-441

Samuelson, P., Nordhaus, W., 2007, Volkswirtschaftslehre, Das internationale Standardwerk der Makro- und Mikroökonomie, Landsberg am Lech

Samuelson, P., Nordhaus, W., 2010, Economics, 19th Edition, Tata McGraw-Hill, New York

Sarstedt, M., Mooi, E., 2011, A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics, Springer, Heidelberg/ Dordrecht/ London/ New York

Sattler, H., 2006, Methoden zur Messung von Präferenzen für Innovationen, Research Papers on Marketing and Retailing, University of Hamburg, No. 32

Sattler, H., Hartmann, A.,2008, Commercial Use of Conjoint Analysis, in: Höck, M.;Voigt, K.-I., (Editors), Operation Managment in Theorie in Praxis, Gabler, Wiesbaden

Sattler, H., Hensel-Boerner, S., 2000, Ein empirischer Validitaetsvergleich zwischen der Customized Computerized Conjoint Analysis (CCC), der Adaptive Conjoint Analysis (ACA) und Self-Explicated-Verfahren, in: Journal of Business Economics (ZfB), Vol. 70, No. 6, pp. 705-727

Sattler, H., Hensel-Boerner, S., 2007, A Comparison of Conjoint Measurement with Self-Explicated Approaches, in: Gustafsson, A., Herrmann, A., Huber, F. (Editors), Conjoint Measurement – Methods and Applications, 4th Edition, Springer, Berlin/ Heidelberg/ New York, pp. 67-76

Sattler, H., Nitschke, T., 2001, Ein empirischer Vergleich von Instrumenten zur Erhebung von Zahlungsbereitschaften, Research Papers on Marketing and Retailung, University of Hamburg, No. 1

Sawtooth Software, 2009, ACBC Technical Paper, Sawtooth Software Technical Paper Series

Sawtooth Software, 2013, Sawtooth Software: About Us, http://www.sawtoothsoftware.com/aboutus.shtml, [accessed May 2013]

Schaefers, B., 2004, Preisgebote im Internet: Neue Ansätze zur Messung individueller Zahlungs-bereitschaften, Gabler, Wiesbaden

Schmidt, M., Hollensen, S., 2006, Marketing Research, An international approach, Pearson Education, Essex

Schnell, R., Hill, P., Esser, E., 2008, Methoden der empirischen Sozialforschung, 8th Edition, Oldenbourg, Munich

Schotter, A., 2008, Microeconomics, A Modern Approach, South-Western Cengage Learning, Mason

Schuppar, B., 2006, Preismanagement, Gabler, Wiesbaden

Sebastian, K.-H., 2002, Brand Pricing, Das Spiel mit dem Feuer, Presentation at Simon-Kucher & Partners, 2nd German Congress for Brands

Sexton, R., 2012, Exploring Microeconomics, 6th Edition, South-Western Cengage Learning, Mason

Sharma, J., K., 2007, Business Statistics, 2nd Edition, Dorling Kindersley, Delhi

Siegel, A., 2011, Practical Business Statistics, 6th Edition, Academic Press Elsevier, Oxford

Siems, F., 2009, Preismanagement: Konzepte – Strategien – Instrumente, Vahlen, Munich

Simon, H., 2004, Ertragssteigerung durch effektivere Pricing-Prozesse, in: Journal of Business Economics, Vol. 11, pp. 1083-1102

Simon, H., 2001, Money for value, Preis, Wert, Kostendruck, Presentation at Simon-Kucher & Partners Strategy Congress

Simon, H., Fassnacht, M., 2009, Preismanagement, 3rd Edition, Gabler, Wiesbaden

Simon, H., Dolan, R., 1997, Profit durch Power Pricing, Strategien aktiver Preispolitik, Campus, Frankfurt/New York

Sirakaya-Turk, E., Uysal, M., Hammit, W., Vaske, J., 2011, Research Methods for Leisure, Recreation, and Tourism, CAB International Oxfordshire

Sivagnanam, K., J., Srinivasan, R., 2010, Business Economics, Tata McGraw-Hill, New Delhi

Skiera, B., Wertenbroch, K., 2002, Measuring Consumers' Willingness to Pay at the Point of Purchase, in: Journal of Marketing Research, Vol. 39, pp. 228-241

Sloman, J., 2006, Economics, 6th Edition, Pearson Education, Essex

Sloman, J., Wride, A., 2009, Economics, 7th Edition, Pearson Education, Essex

Smart, S., Megginson, W., Lucey, B., 2008, Introduction to corporate finance, Cengange Learning EMEA, London

Smith, G. E., Nagle, T., 2005, A question of value, in: Journal of Marketing Management, Vol. 14, No. 4, pp. 38-43

Spann, M., et. al., 2009, Pay what you want: A new participative pricing mechanism, in: Journal of Marketing Vol. 73(1), pp. 44–58

Sredl, K., Soukop, A., 2011, Consumer's behaviour on food markets, in: Agricultural Economics, Vol. 57, No. 3 pp. 140-144

Srinivasan, S., Pauwels, K., Nijs, V., 2008, Demand-Based Pricing Versus Past-Price Dependence: A Cost–Benefit Analysis, in: Journal of Marketing, Vol. 72, pp. 15–27

Srinivasan, S., Pauwels, K., Nijs, V., 2007, Retail-Price Drivers and Retailer Profits, in: Marketing Science, Vol. 26, pp. 473-487

Steiner, M., 2007, Nachfrager orientierte Präferenzmessung: Bestimmung zielgruppenspezifischer Eigenschaftssets auf Basis von Kundenbedürfnissen, Gabler, Wiesbaden

Stier, W.1999, Empirische Forschungsmethoden, 2nd Edition, Springer, Berlin/ Heidelberg/ New York

Stines, A., 2011, Forecasting the competencies that define best-in-class B2B marketers: A future-oriented competency model based on the Cp Delphi-hybrid framework, Competency Plexus Research, Tampa

Stocké, V., 2002, Framing und Rationalität: Die Bedeutung der Informationsdarstellung für das Entscheidungsverhalten, Oldenbourg (Scientia Nova), Munich

Stokes, D., Wilson, N., 2010, Small business management and entrepreneurship, 6th Edition, South-Western Cengage Learning, Hampshire

Stone, M., McCall, J., 2004, International Strategic Marketing: A European Perspective, Routledge, Abingdon

Supino, P., Borer, J., 2012, Principles of Research Methodology: A Guide for Clinical Investigators, Springer, New York / Heidelberg / Dordrecht /London

Taylor, J., Weerapana, A., 2011, Principles of Economics, 7th Edition, South-Western Cengage Learning, Mason

Teichert, T., Shehu, E., 2009, Diskussion der Conjointanalyse in der Forschung, in: Baier, D.; Brusch, M. (Editors), Conjointanalyse, Berlin/ Heidelberg/ New York, pp. 19-39

Titzkus, T., 2005, Reaktive Preispolitik in industriellen Kundenbeziehungen, Gabler, Wiesbaden

Trommsdorf, V., 2009, Konsumentenverhalten, 7th Edition, Kohlhammer, Stuttgart

Tucker, I., 2010, Microeconomics for Today, 7th Edition, South-Western, Cengage Learning, Mason

Van Westendorp, P., 1976, NSS-Price Sensitivity Meter (PSM): A new approach to study consumer perception of price, VENICE ESOMAR Congress, Amsterdam, European Marketing Research Society, pp. 139-166

Varian, H., 2010, Intermediate Microeconomics, A Modern approach, 8th Edition, W. W. Norton & Company, New York/London

Voelckner, F., 2005, Biases in measuring consumers' willingness to pay, Research Papers on Marketing and Retailing, University of Hamburg

Voelckner, F., 2006, An empirical comparison of methods for measuring consumers' willingness to pay, in: Marketing Letters, Vol. 17, pp. 137–149

Voelckner, F., Sattler, H., Teichert, T., 2008, Wahlbasierte Verfahren der Conjoint- Analyse, in: Herrmann, A., Homburg, C., Klarmann, M., (Editors), Handbuch Marktforschung: Methoden - Anwendungen - Praxisbeispiele, 3rd Edition, Gabler, Wiesbaden, pp. 687-711

von der Gathen, A., 2007, Gewinnoptimales Pricing, in: Getraenke-fachgrosshandel, Vol. 8, pp. 36-38

Watson, D., Head, A., 2006, Corporate Finance: Principles & Practice, 4th Edition, Pearson Education, Essex

Weathington, B., Cunningham, C., Pittenger, D., 2012, Understanding Business Research, John Wiley & Sons, New Jersey

Welch, P., Welch, G., 2010, Economics: Theory and Practice, 9th Edition, John Wiley & Sons, New Jersey

Wells, P., 2010, The Automotive industry in an Era of Eco-Austerity, Creating an Industry as if the Planet Mattered, Edward Elgar Publishing, Cheltenham

Wertenbroch, K., Skiera, B., 2002, Measuring consumers' willingsness to pay at the point of purchase, in: Journal of Marketing Research, Vol. 39, pp 228-241

Wiid, J., Diggines, C., 2009, Marketing Research, Juta and Company, Cape Town

Wilson, J., 2010, Essentials of Business Research: A Guide to Doing Your Research Project, Sage Publications, London

Wittink, D., Fiedler, J., Miller, R., 1991, An Empirical Comparison of ACA and Full Profile Judgments, in: Sawtooth Software Conference Proceedings

Woehe, G., 2005, Einführung in die allgemeine Betriebswirtschaftslehre, 22nd Edition, Vahlen, Munich

Woehe, G., Doering, U.,2008, Einführung in die Allgemeine Betriebswirtschaftslehre, 23rd Edition, Vahlen, Munich

Woolridge, J., 2009, Introductory econometrics: A modern approach, 4th Edition, South-Western Cengage Learning, Mason

Woratschek, H., Roth, , 2006, Die Ermittlung von Preisbereitschaften und Preisreaktionen als Basis zur Bestimmung des Kundenwerts, in: Guenter, B., Helm, S., (Editors), Kundenwert, 3rd Edition, Gabler, Wiesbaden, pp. 369-395

Wuebker, G., 2004, Professionelle Preisfindung - Wege aus der Ertragskrise, Business Village, Goettingen

Wuebker, G., Schmidt-Gallas, D., 2006, Statt auf Preiskampf lieber auf Value Pricing setzen, in: bank und markt, Vol. 8

Xu, J., 2005, Market Research Handbook: Measurement, Approach and Practice, iUniverse, Lincoln

Zikmund, W., Barby, B., 2007, Exploring Marketing Research, 9th Edition, Thomson South-Western, Mason

Zimmerman, A. Blythe, J., 2013, Business to Business Marketing Management: A Global Perspective, 2nd Edition, Routledge, Abingdon

10 Appendix

10.1 Questionnaire

10.1.1 Questionnaire Extended Price Sensitivity Meter

Extended Price Sensitivity Meter

S1	
TOPIC	**ASSOZIATIONEN ANHÄNGER**
FILTER	ALLE
INT	
QUESTION	Als nächstes möchte ich mit Ihnen über das Thema „Omnibusanhänger“ sprechen. Was fällt Ihnen spontan zu diesem Thema „Omnibusanhänger“ ein?
PROG	
INT	
ANSWERS	

S2			
TOPIC	**ANHÄNGERKUPPLUNG**		
FILTER	ALLE		
INT			
QUESTION	Sie haben ja vorhin angegeben, dass Sie xxx [ENTSPRECHEND EINBLENDEN AUS SCREENER] Busse in Ihrem Fuhrpark haben. Wie viele dieser Busse haben eine Anhängerkupplung?		
PROG	WENN ANZAHL = 0 WEITER MIT **Fehler! Verweisquelle konnte nicht gefunden werden.**		
INT			
ANSWERS		Code	Next
	_____ Anzahl		

S3			
TOPIC	**ART DER ANHÄNGERKUPPLUNG**		
FILTER	WENN >0 IN S2		
INT			
QUESTION	Mit welcher Art von Anhängerkupplung sind Ihre Busse ausgestattet?		
PROG	MEHRFACHANTWORT Falls Anzahl=1 in Frage Q15, nur 1 Antwort möglich (keine MFN) / Falls Anzahl=2 in Frage Q15, max. 2 Antworten möglich (keine MFN)		
INT			
ANSWERS		Code	Next

	Maulkupplung [PROG: BILD EINFÜGEN]	1	
	Kugelkopfkupplung [PROG: BILD EINFÜGEN]	2	
	Spielfreie DIN Zugöse [PROG: BILD EINFÜGEN]	3	
	Weiß ich nicht	4	

S4			
TOPIC	**UMRÜSTUNG ANHÄNGERKUPPLUNG**		
FILTER	WENN CODE 2 IN S3		
INT			
QUESTION	Würden Sie aufgrund einer höheren Sicherheit von Ihrer Kugelkopfkupplung auf Maulkupplung oder spielfreie DIN Zugöse umrüsten?		
PROG			
INT			
ANSWERS		Code	Next
	Ja	1	
	Nein	2	
	Weiß ich nicht	3	

S5			
TOPIC	**ANZAHL ANHÄNGER**		
FILTER	WENN >0 IN S2		
INT			
QUESTION	Und besitzen Sie auch Anhänger für Ihre Busse? Wenn ja, wie viele Anhänger befinden sich in Ihrem Fuhrpark?		
PROG			
INT			
ANSWERS		Code	Next
	Ja, Anhänger vorhanden	1	
	_____ Anzahl		
	Nein, keine Anhänger vorhanden	2	WEITER MIT FRAGE S15

S6			
TOPIC	**HERSTELLER ANHÄNGER**		
FILTER	WENN CODE 1 IN S5		
INT			
QUESTION	Und von welchem Hersteller ist/sind Ihr/e Anhänger?		
PROG	MEHRFACHANTWORT, Summe muss Anzahl der Anhänger in S5 entsprechen		
INT			
ANSWERS		Code	Next
	Harbeck Anzahl: ____	1	
	Lau Anzahl: ____	2	
	Humbaur Anzahl: ____	3	

	Riedler Anzahl: ____	4	
	Sonstiges, und zwar _____ Anzahl: ____	5	

S7			
TOPIC	**VERWENDUNGSZWECK ANHÄNGER**		
FILTER	WENN CODE 1 IN S5		
INT			
QUESTION	Als nächstes möchte ich Ihnen gerne verschiedene Fragen zu Anhängern stellen. Falls Sie mehrere Anhänger in Ihrem Fuhrpark besitzen, beziehen Sie sich bei der Beantwortung der Fragen bitte auf den Anhänger, den Sie zuletzt gekauft haben. Für welche Zwecke verwenden Sie denn diesen Anhänger?		
PROG	MEHRFACHANTWORT		
INT			
ANSWERS		Code	Next
	Transport von Skiern	1	
	Transport von Gepäck	2	
	Transport von Musikinstrumenten	3	
	Transport von Fahrrädern	4	
	Sonstiges	5	

S8			
TOPIC	**RADTRANSPORTSYSTEME**		
FILTER	WENN CODE 4 IN S7		
INT			
QUESTION	Welches Radtransportsystem verwenden Sie für den Transport von Fahrrädern?		
PROG	Antwort 1 und 2 können kombiniert werden (MFN), Antwort 3 ist Exklusivantwort		
INT			
ANSWERS		Code	Next
	Hängend [PROG: BILD EINFÜGEN]	1	
	Stehend [PROG: **BEIDE** BILDER EINFÜGEN]	2	
	Ich verwende kein Radtransportsystem	3	

S9			
TOPIC	**KOSTEN ANHÄNGER**		
FILTER	WENN CODE 1 IN S5		
INT			
QUESTION	Wieviel haben Sie in etwa für Ihren Anhänger ausgegeben? Falls Sie sich nicht mehr genau an den Preis erinnern können, schätzen Sie diesen bitte.		
PROG			
INT			
ANSWERS			
	_____ €		

S10			
TOPIC	**FAHRLEISTUNG ANHÄNGER**		
FILTER	WENN CODE 1 IN S5		
INT			
QUESTION	Wie viele km fahren Sie jährlich mit diesem Anhänger? Falls Sie es nicht genau wissen, schätzen Sie bitte.		
PROG			
INT			
ANSWERS			
	_____ km		

S11			
TOPIC	**WARTUNG ANHÄNGER**		
FILTER	WENN CODE 1 IN S5		
INT			
QUESTION	Und wo wird dieser Anhänger gewartet?		
PROG	MEHRFACHANTWORT		
INT			
ANSWERS		Code	Next
	Eigene Werkstatt	1	
	Externe Werkstatt	2	

S12	
TOPIC	**ANFORDERUNGEN ANHÄNGER**
FILTER	WENN CODE 1 IN S5
INT	
QUESTION	Ihrer persönlichen Meinung nach, welche speziellen Anforderungen werden heutzutage an Anhänger gestellt?
PROG	
INT	
ANSWERS	

S13					
TOPIC	**RELEVANZ KRAFTSTOFFVERBRAUCH**				
FILTER	WENN CODE 1 IN S5				
INT	LISTE S13 VORLEGEN				
QUESTION	Durch einen Anhänger erhöht sich ja der Kraftstoffverbrauch des Busses. Indem der Anhänger aerodynamisch gestaltet wird, kann der erhöhte Kraftstoffverbrauch reduziert werden. Allerdings verringert sich hierdurch der nutzbare Innenraum. Ist solch eine Einschränkung des Innenraumes zum Zwecke der Kraftstoffeinsparung für Sie akzeptabel?				
PROG					
ANSWERS					
	Vollkommen akzeptabel				Überhaupt nicht akzeptabel
	1	2	3	4	5
NEXT					

S14					
TOPIC	**WICHTIGKEIT DESIGN**				
FILTER	WENN CODE 1 IN S5				
INT	LISTE S14 VORLEGEN				
QUESTION	Und nun noch zum Design des Anhängers: Wie wichtig ist Ihnen, dass das Design des Anhängers zum Zugfahrzeug passt?				
PROG					
ANSWERS					
	Sehr wichtig				Überhaupt nicht wichtig
	1	2	3	4	5
NEXT					

S15			
TOPIC	**KAUFABSICHT ANHÄNGER**		
FILTER	ALLE		
INT			
QUESTION	Beabsichtigen Sie in den nächsten 2-3 Jahren einen Anhänger zu kaufen?		
PROG			
INT			
ANSWERS		Code	Next
	Ja	1	S16
	Nein	2	
	Weiß ich noch nicht	3	

PSM MODELL 1

S16			
TOPIC	**GÜNSTIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Als nächstes zeige ich Ihnen eine Beschreibung für einen Anhänger. Bitte lesen Sie sich diese Beschreibung genau durch. • GFK-Aufbau aerodynamisch optimiert (Höhe und Form); Annahme: Aerodynamik führt zu 5% Kraftstoffersparnis • Folienbeklebung im selben Design wie Zugfahrzeug • Sicherheitspaket (bestehend aus Druckluftbremsanlage, Luftfederung, EBS) • Spielfreie Maulkupplung (mit max. 250 kg Stützlast, 3,5t Anhängelast) • Rückfahrkamera • Ohne multifunktionalem Innenausbau Wenn Sie jetzt einmal an die Kosten für einen solchen Anhänger denken: Welcher Preis erscheint Ihnen hierfür günstig?		
PROG			
INT			
ANSWERS		Code	Next
	_____ €		

PROG: DIE MERKMALE FÜR MODELL 1 WÄHREND DER FRAGEN S17 BIS S21 ANZEIGEN/EINBLENDEN.

- GFK-Aufbau aerodynamisch optimiert (Höhe und Form); Annahme: Aerodynamik führt zu 5% Kraftstoffersparnis
- Folienbeklebung im selben Design wie Zugfahrzeug
- Sicherheitspaket (bestehend aus Druckluftbremsanlage, Luftfederung, EBS)
- Spielfreie Maulkupplung (mit max. 250 kg Stützlast, 3,5t Anhängelast)
- Rückfahrkamera
- Ohne multifunktionalem Innenausbau

S17			
TOPIC	**NOCH VERTRETBARER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen hoch, aber gerade noch vertretbar?		
PROG	PLAUSICHECK (> ALS GÜNSTIGER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S18			
TOPIC	**ZU HOHER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen für einen solchen Anhänger so hoch, dass dieser zum Kauf nicht in Frage kämen?		
PROG	PLAUSICHECK (> ALS NOCH VERTRETBARER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S19			
TOPIC	**ZU NIEDRIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen so niedrig, dass Sie an der Qualität des Anhängers zweifeln würden?		
PROG	PLAUSICHECK (GÜNSTIGER PREIS > ALS ZU GÜNSTIGER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S20			
TOPIC	**KAUFWAHRSCHEINLICHKEIT GÜNSTIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Angenommen, der Preis für diesen Anhänger würde [GÜNSTIGEN PREIS EINBLENDEN] betragen. Wie wahrscheinlich würden Sie diesen Anhänger kaufen?		
PROG			
INT			
ANSWERS		Code	Next
	100% = auf jeden Fall	1	
	90%	2	
	80%	3	
	70%	4	
	60%	5	
	50%	6	
	40%	7	
	30%	8	
	20%	9	
	10%	10	
	0% = auf keinen Fall	11	

S21			
TOPIC	**KAUFWAHRSCHEINLICHKEIT TEURER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Angenommen, der Preis für diesen Anhänger würde [TEUREN PREIS EINBLENDEN] betragen. Wie wahrscheinlich würden Sie diesen Anhänger kaufen?		
PROG			
INT			
ANSWERS		Code	Next
	100% = auf jeden Fall	1	
	90%	2	
	80%	3	
	70%	4	
	60%	5	
	50%	6	
	40%	7	
	30%	8	
	20%	9	
	10%	10	
	0% = auf keinen Fall	11	

S22			
TOPIC	**AUFPREIS FÜR MULTIFUNKTIONALEM INNENAUSBAU FÜR MODELL 1**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welchen Aufpreis wären Sie bereit zu zahlen, wenn dieser Anhänger mit einem multifunktionalen Innenausbau ausgestattet wäre?		
PROG			
INT			
ANSWERS		Code	Next
	_____ €		

PSM MODELL 2

S23			
TOPIC	**GÜNSTIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Als nächstes zeige ich Ihnen eine weitere Beschreibung für einen Anhänger. Bitte lesen Sie sich diese Beschreibung genau durch. • Kastenförmiger Standardaufbau (fest, nicht Plane) • Folienbeklebung im selben Design wie Zugfahrzeug • Auflaufbremse • Kugelkopfkupplung (mit max. 150 kg Stützlast, 3,2t Anhängelast) • Ohne multifunktionalem Innenausbau Wenn Sie jetzt einmal an die Kosten für einen solchen Anhänger denken: Welcher Preis erscheint Ihnen hierfür günstig?		
PROG			
INT			
ANSWERS		Code	Next
	_____ €		

PROG: DIE MERKMALE FÜR MODELL „ WÄHREND DER FRAGEN S24 BIS S28 ANZEIGEN/EINBLENDEN.

- Kastenförmiger Standardaufbau (fest, nicht Plane)
- Folienbeklebung im selben Design wie Zugfahrzeug
- Auflaufbremse
- Kugelkopfkupplung (mit max. 150 kg Stützlast, 3,2t Anhängelast)
- Ohne multifunktionalem Innenausbau

S24			
TOPIC	**NOCH VERTRETBARER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen hoch, aber gerade noch vertretbar?		
PROG	PLAUSICHECK (> ALS GÜNSTIGER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S25			
TOPIC	**ZU HOHER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen für einen solchen Anhänger so hoch, dass dieser zum Kauf nicht in Frage kämen?		
PROG	PLAUSICHECK (> ALS NOCH VERTRETBARER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S26			
TOPIC	**ZU NIEDRIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welcher Preis erscheint Ihnen so niedrig, dass Sie an der Qualität des Anhängers zweifeln würden?		
PROG	PLAUSICHECK (GÜNSTIGER PREIS > ALS ZU GÜNSTIGER PREIS)		
INT			
ANSWERS		Code	Next
	_____ €		

S27			
TOPIC	**KAUFWAHRSCHEINLICHKEIT GÜNSTIGER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Angenommen, der Preis für diesen Anhänger würde [GÜNSTIGEN PREIS EINBLENDEN] betragen. Wie wahrscheinlich würden Sie diesen Anhänger kaufen?		
PROG			
INT			
ANSWERS		Code	Next
	100% = auf jeden Fall	1	
	90%	2	
	80%	3	
	70%	4	
	60%	5	
	50%	6	
	40%	7	
	30%	8	
	20%	9	
	10%	10	
	0% = auf keinen Fall	11	

S28			
TOPIC	**KAUFWAHRSCHEINLICHKEIT TEURER PREIS**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Angenommen, der Preis für diesen Anhänger würde [TEUREN PREIS EINBLENDEN] betragen. Wie wahrscheinlich würden Sie diesen Anhänger kaufen?		
PROG			
INT			
ANSWERS		Code	Next
	100% = auf jeden Fall	1	
	90%	2	
	80%	3	
	70%	4	
	60%	5	
	50%	6	
	40%	7	
	30%	8	
	20%	9	
	10%	10	
	0% = auf keinen Fall	11	

S29			
TOPIC	**AUFPREIS FÜR MULTIFUNKTIONALEM INNENAUSBAU FÜR MODELL 2**		
FILTER	WENN CODE 1 IN S5 ODER CODE 1 IN S15		
INT			
QUESTION	Und welchen Aufpreis wären Sie bereit zu zahlen, wenn dieser Anhänger mit einem multifunktionalen Innenausbau ausgestattet wäre?		
PROG			
INT			
ANSWERS		Code	Next
	_____ €		

S30	
TOPIC	**BEZUG VOM HERSTELLER**
FILTER	WENN CODE 1 IN S15
INT	
QUESTION	Wenn Sie an den zukünftigen Kauf eines Anhängers denken: Wie wichtig wäre es Ihnen, diesen Anhänger direkt vom Hersteller zu beziehen?
PROG	
INT	
ANSWERS	

	Sehr wichtig				Überhaupt nicht wichtig
	1	2	3	4	5
NEXT					

S31					
TOPIC	**GESCHWINDIGKEITSBESCHRÄNKUNG**				
FILTER	WENN CODE 2 IN S5 UND CODE 1 IN S15				
INT					
QUESTION	Mit einem Anhänger ist ja eine Geschwindigkeit von maximal 80 km/h zulässig. Wie akzeptabel ist für Sie eine Maximalgeschwindigkeit von 80 km/h?				
PROG					
INT					
ANSWERS					
	Vollkommen akzeptabel				Überhaupt nicht akzeptabel
	1	2	3	4	5
NEXT					

10.1.2 Questionnaire Choice Based Conjoint Measurement

CONJOINT

Wir haben für Sie eine Aufgabe vorbereitet. Bitte setzen Sie sich vor den Computer, so dass Sie den ganzen Bildschirm gut sehen können.

Ein Anhänger besteht aus zahlreichen der eben erwähnten Eigenschaften. Wir werden Ihnen jetzt verschiedene Anhänger mit unterschiedlichen Merkmalen anhand von Bildern und Beschreibungen zeigen. Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden (so, als würden Sie es kaufen bzw. bestellen). Die Anhänger unterscheiden sich in bestimmten Eigenschaften (z.B. Preis) und Sie entscheiden, welchen Anhänger Sie am ehesten kaufen bzw. bestellen würden. Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt (z.B. wenn Sie alle zu teuer finden).

Merkmal 1: Bremse
Es gibt 2 unterschiedliche Bremsen:

- **Auflaufbremse**
  - **Vorteil: *kostengünstig***
  - **Nachteil: *hoher Verschleiß***
- **Druckluftbremse**
  - **Vorteil: *hohe Sicherheit & geringe Materialbeanspruchung***
  - **Nachteil: *teuer***

Merkmal 2: Kupplungsart
Es gibt 3 unterschiedliche Kupplungsarten:

- **Kugelkopfkupplung**
  - **Vorteil: *einfache Handhabung***
  - **Nachteil: *wartungsintensiv & beschränkte Stabilität***
- **Maulkupplung**
  - **Vorteil: *hohe Sicherheit & Eignung für Druckluft-Bremse***
  - **Nachteil: *Lärmentwicklung***

- **Spielfreie DIN-Zugöse**
  - **Vorteil: sehr *hohe Sicherheit & keine Lärmentwicklung & Eignung für Druckluft-Bremse***
  - **Nachteil: teuer**

Merkmal 3: Aufbau
Es gibt 2 unterschiedliche Aufbauarten:

- **GFK-Aufbau**
  - **Vorteil: *ansprechendes Design & aeorodynamisch (niedrigerer Benzinverbrauch)***
  - **Nachteil: *sehr teuer (Formkosten) & eingeschränkte Nutzung des gesamten Innenraums & anfällig gegenüber Bohrungen***
- **Kastenaufbau aus Sandwich-Panelen [PROG: BILD EINFÜGEN]**
  - **Vorteil: *kostengünstig & Nutzung des gesamten Innenraums***
  - **Nachteil: *weniger ansprechendes Design***

Merkmal 4: Preis
Es gibt 5 unterschiedliche Preise:

- 20% unter Marktdurchschnitt
- 10% unter Marktdurchschnitt
- Marktdurchschnitt
- 10% über Marktdurchschnitt
- 20% über Marktdurchschnitt

Wir werden Ihnen nun also verschiedene Eigenschaftskombinationen von Anhängern zeigen. Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden. Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt.

CONJOINT ATTRIBUTE

MERKMAL: Bremse	Auflaufbremse
	Druckluftbremse
MERKMAL: Kupplungsart	Kugelkopfkupplung
	Maulkupplung
	Spielfreie DIN-Zugöse
MERKMAL: Aufbau	GFK-Aufbau
	Kastenaufbau aus Sandwich-Panelen
MERKMAL: Preis	20% unter Marktdurchschnitt
	10% unter Marktdurchschnitt
	Marktdurchschnitt
	10% über Marktdurchschnitt
	20% über Marktdurchschnitt

Wir haben für Sie eine Aufgabe vorbereitet. Bitte setzen Sie sich vor den Computer, so dass Sie den ganzen Bildschirm gut sehen können.

Ein Anhänger besteht aus zahlreichen der eben erwähnten Eigenschaften. Wir werden Ihnen jetzt verschiedene Anhänger mit unterschiedlichen Merkmalen anhand von Bildern und Beschreibungen zeigen. Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden (so, als würden Sie es kaufen bzw. bestellen). Die Anhänger unterscheiden sich in bestimmten Eigenschaften (z.B. Preis) und Sie entscheiden, welchen Anhänger Sie am ehesten kaufen bzw. bestellen würden. Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt (z.B. wenn Sie alle zu teuer finden).

INT: JEDES MERKMAL MIT DEN UNTERSCHIEDLICHEN AUSPRÄGUNGEN MIT DEM BEFRAGTEN DURCHGEHEN.

INT: BITTE AUF "Weiter" KLICKEN.

Weiter >> << Zurück

Merkmal 1: Bremse

Es gibt 2 unterschiedliche Bremsen:

Auflaufbremse

o Vorteil: kostengünstig
o Nachteil: hoher Verschleiß

Druckluftbremse

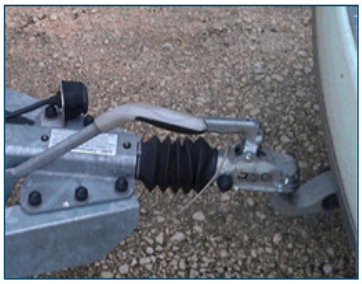
o Vorteil: hohe Sicherheit & geringe Materialbeanspruchung
o Nachteil: teuer

Weiter >> << Zurück

Merkmal 2: Kupplungsart

Es gibt 3 unterschiedliche Kupplungsarten:

Kugelkopfkupplung

o Vorteil: einfache Handhabung
o Nachteil: wartungsintensiv & beschränkte Stabilität

Maulkupplung

o Vorteil: hohe Sicherheit & Eignung für Druckluft-Bremse
o Nachteil: Lärmentwicklung

Spielfreie DIN-Zugöse

o Vorteil: sehr hohe Sicherheit & keine Lärmentwicklung & Eignung für Druckluft-Bremse
o Nachteil: teuer

Weiter >> << Zurück

Merkmal 3: Aufbau

Es gibt 2 unterschiedliche Aufbauarten:

GFK-Aufbau

o Vorteil: ansprechendes Design & aeorodynamisch (niedrigerer Benzinverbrauch)
o Nachteil: sehr teuer (Formkosten) & eingeschränkte Nutzung des gesamten Innenraums & anfällig gegenüber Bohrungen

Kastenaufbau aus Sandwich-Panelen

o Vorteil: kostengünstig & Nutzung des gesamten Innenraums
o Nachteil: weniger ansprechendes Design

Weiter >> << Zurück

Merkmal 4: Preis

Es gibt 5 unterschiedliche Preise:

- 20% unter Marktdurchschnitt

- 10% unter Marktdurchschnitt

- Marktdurchschnitt

- 10% über Marktdurchschnitt

- 20% über Marktdurchschnitt

Weiter >> << Zurück

Wir werden Ihnen nun also verschiedene Eigenschaftskombinationen von Anhängern zeigen.
Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden.
Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt.

Bremse	Druckluftbremse	Druckluftbremse	Auflaufbremse	Auflaufbremse
Kupplungsart	Kugelkopfkupplung	Maulkupplung	Spielfreie DIN-Zugöse	Maulkupplung
Aufbau	Kastenaufbau aus Sandwich-Panelen	GFK-Aufbau	GFK-Aufbau	Kastenaufbau aus Sandwich-Panelen
Preis	20% unter Marktdurchschnitt	10% unter Marktdurchschnitt	20% über Marktdurchschnitt	10% über Marktdurchschnitt
	○	○	○	○

Keines von diesen

○

Seite 1 von 18

Weiter >>

Wir werden Ihnen nun also verschiedene Eigenschaftskombinationen von Anhängern zeigen.
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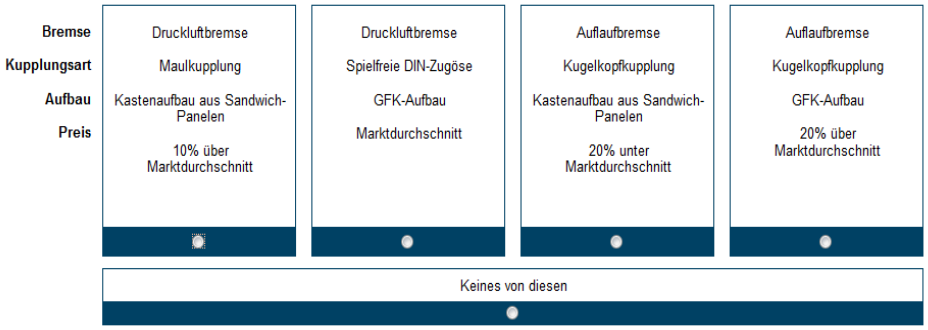

Seite 2 von 18

Weiter >>

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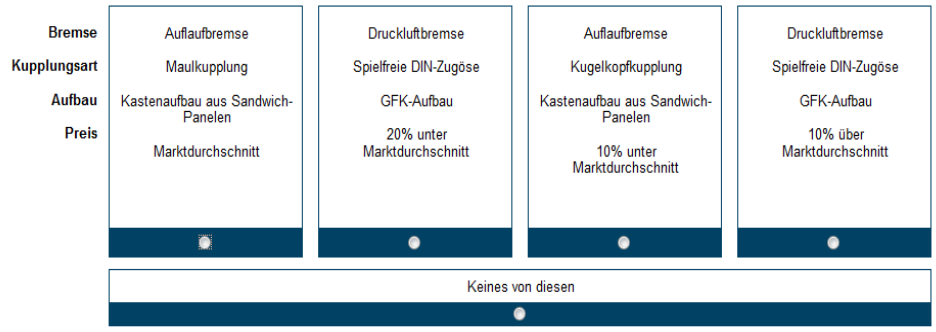

Seite 3 von 18

Weiter >>

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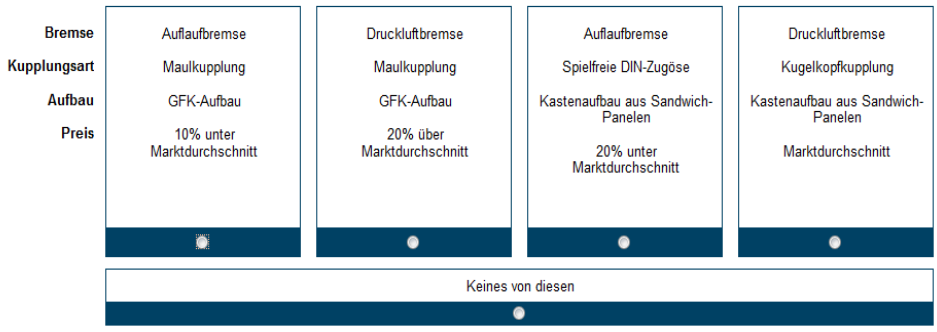

Seite 4 von 18

Weiter >>

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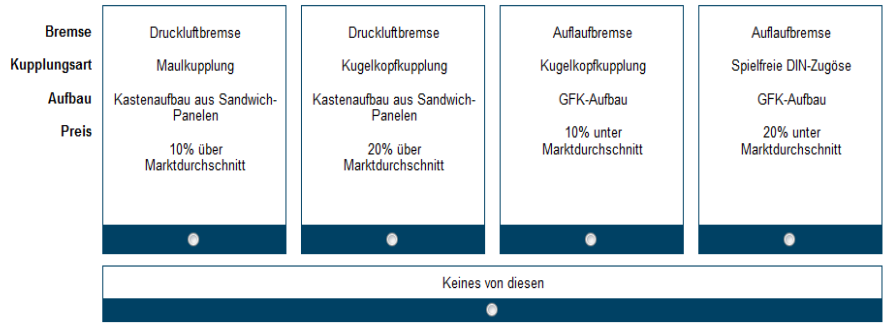

Seite 5 von 18

Weiter >>

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Seite 6 von 18

Weiter >>

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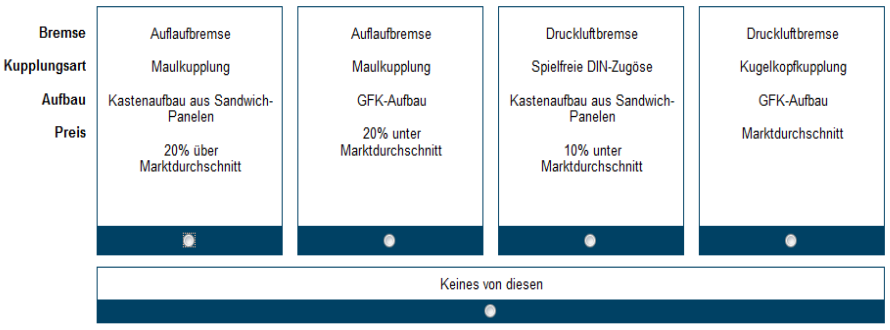

Seite 7 von 18

Weiter >>

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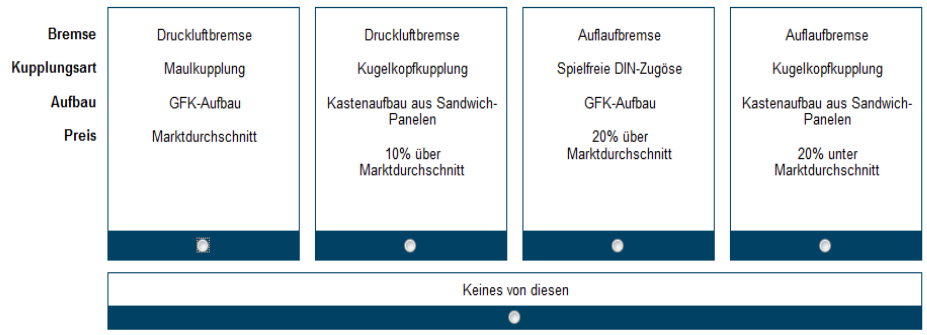

Seite 8 von 18

Weiter >>

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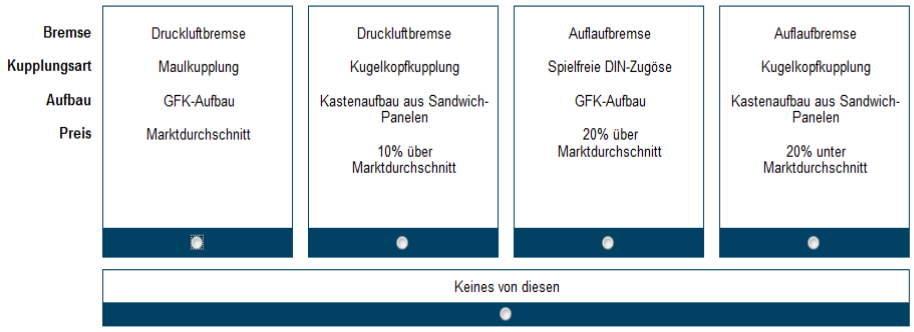

Seite 8 von 18

Weiter >>

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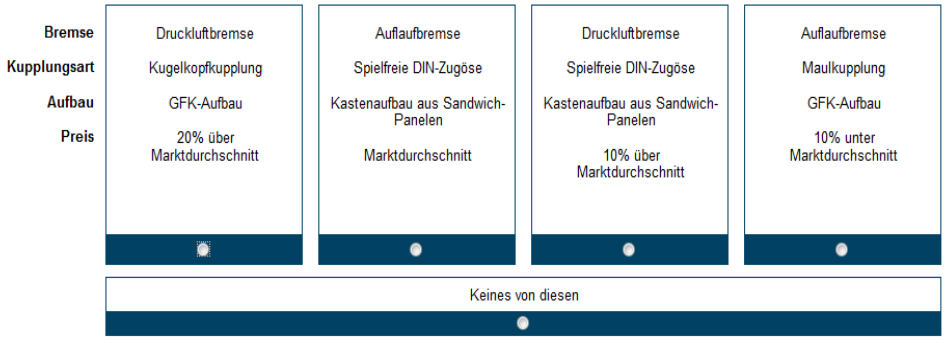

Seite 9 von 18

Weiter >>

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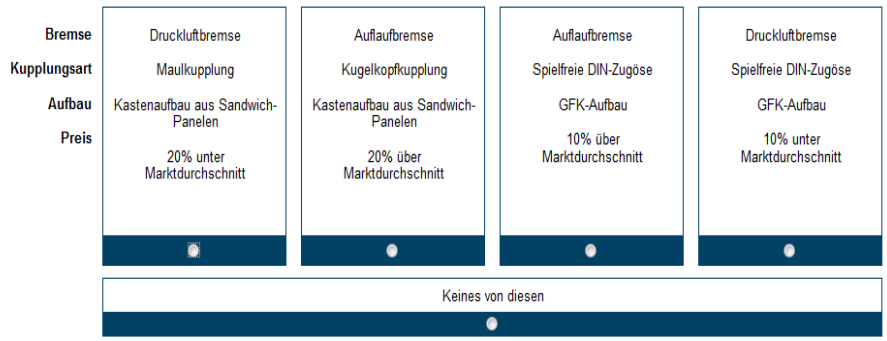

Seite 10 von 18

Weiter >>

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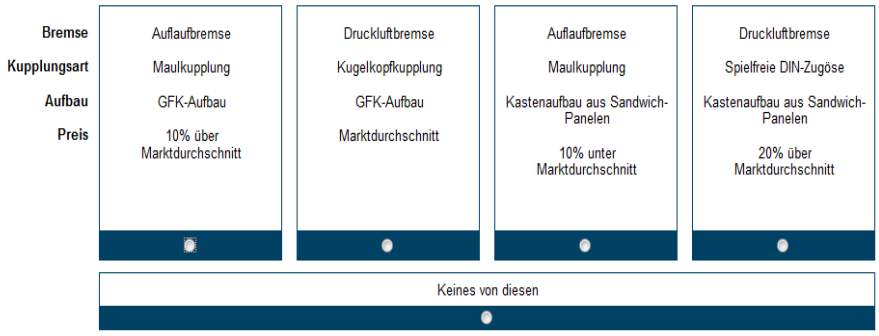

Seite 11 von 18

Weiter >>

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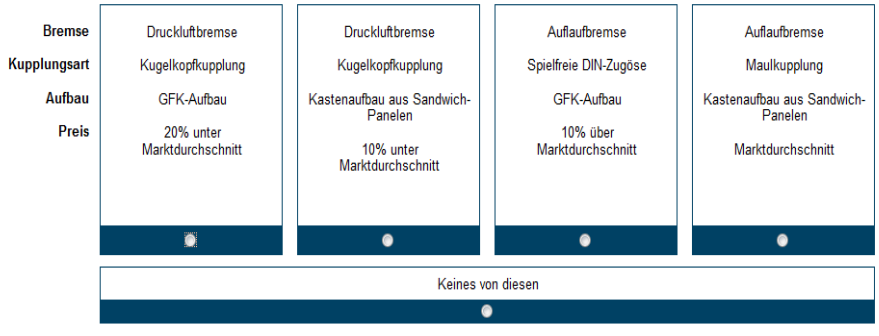

Seite 12 von 18

Weiter >>

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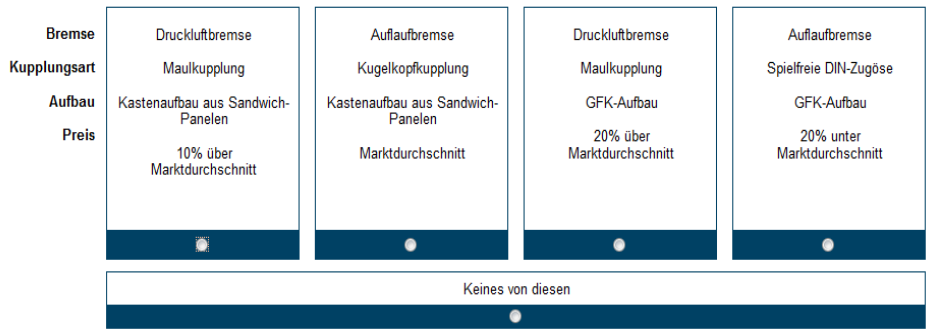

Seite 13 von 18

Weiter >>

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Seite 14 von 18

Weiter >>

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Seite 15 von 18

Weiter >>

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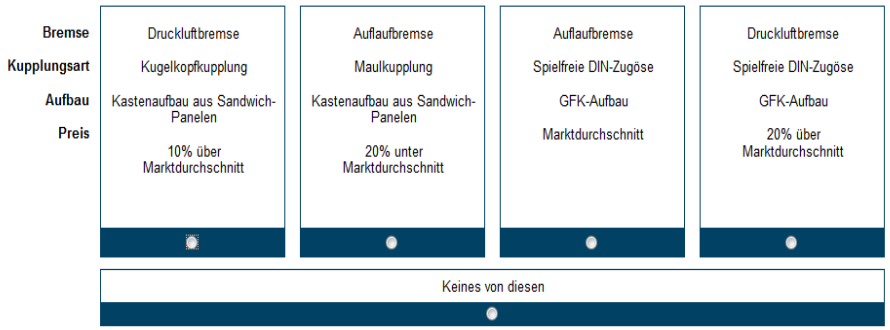

Seite 16 von 18

Weiter >>

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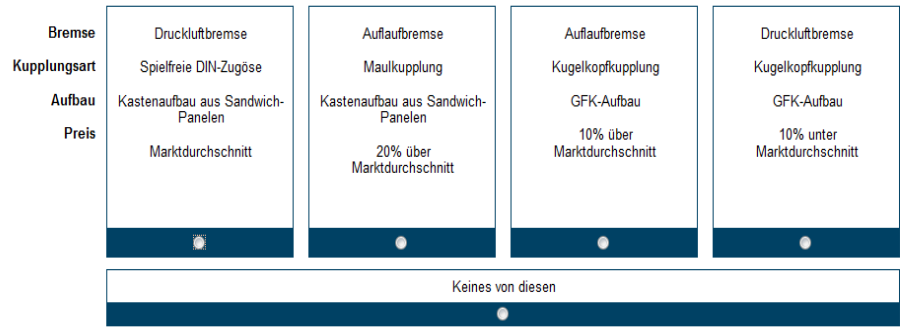
Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden.
Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt.



Seite 17 von 18

Weiter >>

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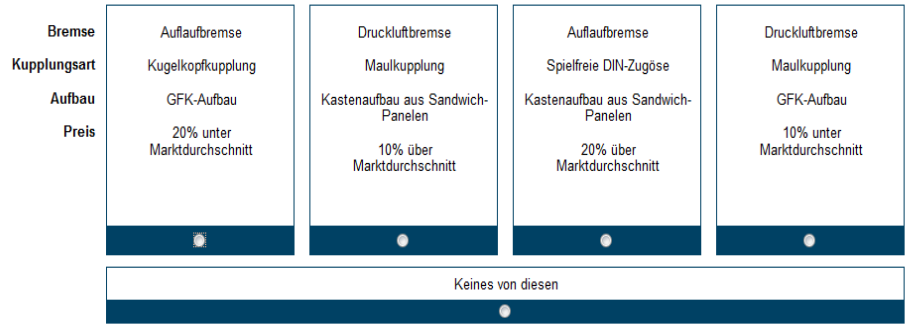
Wir bitten Sie, sich jeweils für eines der gezeigten Produkte zu entscheiden.
Sie haben auch die Möglichkeit, kein Produkt zu wählen, wenn Ihnen keines der zur Auswahl stehenden Produkte zusagt.



Seite 18 von 18

Weiter >>

Vielen Dank. Bitte wenden Sie sich nun wieder an den Interviewer.

Weiter >> << Zurück

10.2 CBC – Results from Hierarchical Bayes Estimation

Part-worth utilities – Detailed results (Example)

```
CBC/HB Build Process (30.08.2012 15:30:06)
==================================================
Data File: E:\mv\Ausw\K209\P12_573\Auswertung 120830\HB -
DE\P11_0868_Evobus_Aftersales_1.CHO

Attribute              Coding          Levels
--------------------------------------------------
Brake                  Part Worth      2
Trailer coupling       Part Worth      3
Body                   Part Worth      2
Price                  Part Worth      5

The number of parameters to be estimated (including 'None') is 9.

All tasks are included in estimation.

Build includes 34 respondents.

Total number of choices in each response category:
Category   Number  Percent
--------------------------------------------------
       1     111   18.14%
       2     104   16.99%
       3     101   16.50%
       4      88   14.38%
       5     208   33.99%

There are 612 expanded tasks in total, or an average of 18.0
tasks per respondent.

The build file
'C:\Users\kosterwold.U68\AppData\Local\Temp\tmp64A2.tmp' was
built successfully.


CBC/HB Estimation (8/30/2012 3:30:07 PM)
==================================================
Using build file
'C:\Users\kosterwold.U68\AppData\Local\Temp\tmp64A2.tmp'
Preliminary iterations        10000
Draws used per respondent     10000
Total iterations              20000
Skip factor for log file        100
Number of respondents            34
Parameters per respondent         9
Total task weight              1.00
No constraints in use
Random draws not saved
Variables are effects-coded
Betas starting at 0.0
Prior degrees of freedom          5
Prior variance                 2.00
Random seed used                  1
```

Iteration	Jump Size	Acceptance	Pct. Cert.	RLH	Avg Var	Parameter RMS
100	0.082	0.353	0.574	0.504	2.643	1.903
200	0.136	0.176	0.588	0.515	2.602	1.729
300	0.082	0.235	0.616	0.539	3.241	2.151
400	0.111	0.176	0.592	0.519	3.501	2.164
500	0.082	0.324	0.616	0.539	3.442	2.345
600	0.074	0.382	0.614	0.537	5.188	2.394
700	0.082	0.382	0.585	0.513	3.714	2.107
800	0.074	0.412	0.612	0.536	3.102	2.325
900	0.100	0.294	0.615	0.538	3.991	2.454
1000	0.110	0.294	0.592	0.518	3.795	2.415
1100	0.100	0.176	0.599	0.525	3.654	2.289
1200	0.110	0.353	0.601	0.526	3.048	2.189
1300	0.099	0.294	0.608	0.532	2.802	2.140
1400	0.090	0.265	0.595	0.521	3.959	2.131
1500	0.121	0.235	0.613	0.537	3.574	2.424
1600	0.110	0.294	0.624	0.546	3.805	2.484
1700	0.081	0.382	0.605	0.529	3.044	2.273
1800	0.090	0.441	0.603	0.528	3.042	2.266
1900	0.121	0.235	0.590	0.517	2.908	2.137
2000	0.073	0.441	0.614	0.537	3.859	2.183
2100	0.066	0.471	0.605	0.530	3.172	2.152
2200	0.109	0.206	0.598	0.523	4.012	2.263
2300	0.081	0.294	0.590	0.517	3.402	2.161
2400	0.089	0.147	0.616	0.539	4.054	2.150
2500	0.098	0.412	0.591	0.518	2.510	2.260
2600	0.089	0.353	0.606	0.531	3.896	2.274
2700	0.066	0.265	0.624	0.546	4.201	2.454
2800	0.073	0.324	0.619	0.542	4.613	2.508
2900	0.098	0.324	0.591	0.518	4.612	2.063
3000	0.132	0.147	0.591	0.518	2.764	2.050
3100	0.080	0.265	0.605	0.529	3.439	2.274
3200	0.108	0.265	0.594	0.520	4.328	2.261
3300	0.098	0.412	0.584	0.512	2.872	2.024
3400	0.132	0.294	0.573	0.503	2.909	2.040
3500	0.119	0.265	0.594	0.521	3.065	2.153
3600	0.072	0.324	0.607	0.531	2.979	2.254
3700	0.097	0.235	0.613	0.536	2.626	1.994
3800	0.088	0.412	0.587	0.514	3.579	2.293
3900	0.097	0.206	0.600	0.525	2.968	2.327
4000	0.107	0.294	0.602	0.527	3.325	2.250
4100	0.097	0.206	0.581	0.510	3.612	2.324
4200	0.072	0.382	0.586	0.513	3.888	2.122
4300	0.079	0.265	0.592	0.519	2.804	2.113
4400	0.072	0.353	0.604	0.529	3.222	2.221
4500	0.118	0.265	0.598	0.524	2.744	2.100
4600	0.059	0.353	0.615	0.538	4.185	2.591
4700	0.118	0.206	0.594	0.521	4.652	2.140

4800	0.107	0.324	0.595	0.521	2.915	2.283
4900	0.096	0.294	0.607	0.531	3.160	2.307
5000	0.087	0.353	0.601	0.526	2.888	2.215
5100	0.118	0.206	0.602	0.527	4.591	2.326
5200	0.071	0.353	0.614	0.537	3.685	2.465
5300	0.064	0.353	0.602	0.527	2.977	1.989
5400	0.130	0.294	0.609	0.533	3.187	2.132
5500	0.096	0.382	0.620	0.542	3.286	2.164
5600	0.087	0.265	0.605	0.530	3.187	2.245
5700	0.078	0.235	0.609	0.533	3.731	2.273
5800	0.087	0.441	0.602	0.527	3.711	2.362
5900	0.096	0.382	0.596	0.522	3.610	2.270
6000	0.086	0.353	0.578	0.507	2.785	2.090
6100	0.095	0.324	0.599	0.524	2.888	2.101
6200	0.105	0.353	0.601	0.526	3.821	2.459
6300	0.095	0.441	0.596	0.522	3.330	2.235
6400	0.086	0.235	0.624	0.546	4.322	2.447
6500	0.095	0.294	0.600	0.525	4.155	2.310
6600	0.105	0.265	0.615	0.538	4.075	2.299
6700	0.095	0.353	0.588	0.515	2.766	2.213
6800	0.128	0.235	0.581	0.509	4.076	2.232
6900	0.063	0.324	0.627	0.549	2.155	2.125
7000	0.086	0.235	0.635	0.556	5.108	2.678
7100	0.095	0.529	0.577	0.506	2.170	2.047
7200	0.086	0.324	0.615	0.538	3.170	2.266
7300	0.063	0.588	0.600	0.525	3.846	2.515
7400	0.085	0.206	0.617	0.540	3.824	2.190
7500	0.094	0.353	0.586	0.514	3.273	2.256
7600	0.085	0.294	0.587	0.515	3.041	2.106
7700	0.115	0.235	0.618	0.541	2.812	2.180
7800	0.085	0.412	0.613	0.536	3.853	2.348
7900	0.094	0.294	0.603	0.528	2.792	2.081
8000	0.085	0.353	0.608	0.532	3.539	2.192
8100	0.077	0.500	0.615	0.538	3.395	2.269
8200	0.085	0.324	0.598	0.523	3.439	2.321
8300	0.094	0.294	0.601	0.526	3.573	2.309
8400	0.069	0.353	0.616	0.539	3.214	2.349
8500	0.094	0.235	0.607	0.531	3.545	2.231
8600	0.085	0.353	0.624	0.546	4.541	2.366
8700	0.076	0.412	0.629	0.550	4.240	2.646
8800	0.069	0.353	0.626	0.548	4.154	2.546
8900	0.062	0.235	0.620	0.542	4.549	2.542
9000	0.084	0.324	0.606	0.530	4.206	2.540
9100	0.093	0.324	0.608	0.532	4.072	2.401
9200	0.084	0.235	0.622	0.544	4.293	2.489
9300	0.076	0.294	0.622	0.545	4.413	2.452
9400	0.069	0.353	0.590	0.517	5.112	2.402
9500	0.093	0.176	0.609	0.533	4.653	2.440

9600	0.084	0.382	0.605	0.529	3.574	2.360
9700	0.093	0.382	0.601	0.526	4.424	2.462
9800	0.102	0.235	0.611	0.534	3.533	2.372
9900	0.113	0.294	0.590	0.517	2.607	2.014
10000	0.102	0.206	0.618	0.541	2.611	2.073
10100	0.092	0.265	0.607	0.531	3.195	2.430
10200	0.102	0.382	0.608	0.532	3.595	2.266
10300	0.092	0.294	0.615	0.538	3.943	2.394
10400	0.083	0.324	0.593	0.520	3.467	2.214
10500	0.092	0.324	0.592	0.518	2.651	1.990
10600	0.102	0.294	0.605	0.529	3.004	2.232
10700	0.075	0.382	0.595	0.521	3.602	2.360
10800	0.101	0.441	0.608	0.532	3.759	2.280
10900	0.092	0.324	0.605	0.530	3.277	1.941
11000	0.101	0.294	0.603	0.528	3.177	2.174
11100	0.075	0.206	0.615	0.538	4.358	2.406
11200	0.068	0.500	0.601	0.526	2.322	2.159
11300	0.091	0.294	0.599	0.524	4.173	2.460
11400	0.083	0.294	0.584	0.512	4.403	2.461
11500	0.075	0.294	0.608	0.532	4.755	2.307
11600	0.101	0.471	0.592	0.518	2.877	2.113
11700	0.136	0.235	0.602	0.527	3.767	2.353
11800	0.082	0.294	0.618	0.541	4.127	2.825
11900	0.061	0.382	0.612	0.536	3.735	2.422
12000	0.082	0.265	0.615	0.538	3.849	2.471
12100	0.091	0.147	0.595	0.521	4.067	2.610
12200	0.100	0.324	0.585	0.513	3.186	2.227
12300	0.111	0.206	0.620	0.543	4.253	2.235
12400	0.067	0.471	0.599	0.524	3.785	2.437
12500	0.074	0.294	0.602	0.527	4.120	2.278
12600	0.100	0.382	0.616	0.539	3.902	2.530
12700	0.074	0.441	0.608	0.532	4.000	2.577
12800	0.100	0.382	0.599	0.524	3.410	2.415
12900	0.090	0.294	0.596	0.522	4.195	2.150
13000	0.100	0.294	0.588	0.515	2.837	2.062
13100	0.090	0.294	0.599	0.524	3.439	2.387
13200	0.081	0.353	0.583	0.511	2.510	2.108
13300	0.110	0.382	0.618	0.541	2.761	2.284
13400	0.099	0.176	0.597	0.522	2.553	2.210
13500	0.090	0.382	0.589	0.516	2.740	2.270
13600	0.081	0.324	0.597	0.523	4.333	2.353
13700	0.134	0.353	0.594	0.520	3.454	2.486
13800	0.121	0.382	0.587	0.514	4.577	2.680
13900	0.073	0.441	0.613	0.536	3.640	2.221
14000	0.099	0.353	0.600	0.525	3.902	2.379
14100	0.089	0.294	0.563	0.495	2.879	2.127
14200	0.081	0.412	0.596	0.522	3.369	2.183
14300	0.109	0.235	0.604	0.529	3.251	2.178

14400	0.098	0.265	0.623	0.545	4.320	2.350
14500	0.133	0.265	0.614	0.537	3.069	2.035
14600	0.080	0.324	0.590	0.517	4.128	2.034
14700	0.109	0.235	0.603	0.528	2.975	2.005
14800	0.098	0.294	0.612	0.536	3.468	2.056
14900	0.089	0.412	0.567	0.498	5.124	2.367
15000	0.066	0.412	0.613	0.536	2.849	2.069
15100	0.089	0.324	0.590	0.517	3.425	2.380
15200	0.080	0.382	0.591	0.518	3.533	2.289
15300	0.072	0.412	0.603	0.527	3.273	2.342
15400	0.098	0.382	0.614	0.537	5.096	2.441
15500	0.072	0.324	0.596	0.522	2.505	2.114
15600	0.080	0.235	0.601	0.526	2.469	2.050
15700	0.088	0.324	0.604	0.528	3.641	2.265
15800	0.097	0.265	0.608	0.533	3.684	2.180
15900	0.088	0.324	0.606	0.531	3.123	2.068
16000	0.079	0.353	0.601	0.526	3.469	2.269
16100	0.107	0.324	0.587	0.515	3.010	2.105
16200	0.079	0.353	0.588	0.515	3.572	2.199
16300	0.072	0.324	0.613	0.536	4.134	2.371
16400	0.097	0.324	0.602	0.527	3.525	2.323
16500	0.072	0.324	0.594	0.520	2.986	2.200
16600	0.079	0.294	0.612	0.536	3.378	2.421
16700	0.107	0.324	0.603	0.528	3.311	2.250
16800	0.118	0.235	0.605	0.529	3.223	2.145
16900	0.071	0.471	0.608	0.532	3.242	2.157
17000	0.064	0.441	0.644	0.564	3.668	2.574
17100	0.106	0.176	0.617	0.539	4.471	2.423
17200	0.118	0.265	0.591	0.518	3.298	2.434
17300	0.106	0.324	0.597	0.523	2.987	1.979
17400	0.096	0.353	0.599	0.525	3.426	2.133
17500	0.106	0.294	0.608	0.533	3.052	2.368
17600	0.078	0.382	0.598	0.524	3.017	2.132
17700	0.071	0.324	0.602	0.527	3.630	2.254
17800	0.064	0.382	0.627	0.549	4.830	2.367
17900	0.071	0.353	0.618	0.541	4.013	2.255
18000	0.096	0.235	0.606	0.530	4.729	2.403
18100	0.086	0.441	0.579	0.508	2.461	2.102
18200	0.117	0.176	0.594	0.520	2.936	2.227
18300	0.105	0.324	0.608	0.532	3.801	2.240
18400	0.078	0.382	0.616	0.539	3.976	2.459
18500	0.086	0.500	0.617	0.540	3.028	2.052
18600	0.078	0.235	0.601	0.526	3.224	2.302
18700	0.105	0.353	0.598	0.523	3.385	2.489
18800	0.095	0.353	0.610	0.533	3.769	2.425
18900	0.105	0.265	0.616	0.539	3.294	2.454
19000	0.095	0.353	0.586	0.514	2.591	2.261
19100	0.105	0.324	0.603	0.528	3.923	2.314

19200	0.063	0.441	0.616	0.539	3.720	2.398
19300	0.070	0.294	0.601	0.526	4.297	2.347
19400	0.094	0.206	0.607	0.531	2.377	2.105
19500	0.104	0.235	0.593	0.520	2.680	2.233
19600	0.077	0.441	0.592	0.518	3.815	2.146
19700	0.085	0.294	0.612	0.535	3.882	2.280
19800	0.115	0.235	0.588	0.515	3.285	2.343
19900	0.085	0.382	0.598	0.523	2.886	2.181
20000	0.094	0.412	0.612	0.536	2.983	2.166

CBC/HB Build Process (30.08.2012 16:05:30)
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Data File: E:\mv\Ausw\K209\P12_573\Auswertung 120830\HB - DE\P11_0868_Evobus_Aftersales_1.CHO

Attribute	Coding	Levels
Bremse	Part Worth	2
Kupplungsart	Part Worth	3
Aufbauart	Part Worth	2
Preis	Part Worth	5

The number of parameters to be estimated (including 'None') is 9.

All tasks are included in estimation.

Build includes 34 respondents.

Total number of choices in each response category:

Category	Number	Percent
1	111	18.14%
2	104	16.99%
3	101	16.50%
4	88	14.38%
5	208	33.99%

There are 612 expanded tasks in total, or an average of 18.0 tasks per respondent.

The build file 'C:\Users\kosterwold.U68\AppData\Local\Temp\tmpCE7C.tmp' was built successfully.

```
CBC/HB Estimation (8/30/2012 4:05:32 PM)
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Using build file
'C:\Users\kosterwold.U68\AppData\Local\Temp\tmpCE7C.tmp'
Preliminary iterations        10000
Draws used per respondent     10000
Total iterations              20000
Skip factor for log file        100
Number of respondents            34
Parameters per respondent         9
Total task weight              1.00
Constraints in use                4
Random draws not saved
Variables are effects-coded
Betas starting at 0.0
Prior degrees of freedom          5
Prior variance                 2.00
Random seed used                  1
```

Iteration	Jump Size	Acceptance	Pct. Cert.	RLH	Avg Var	Parameter RMS
100	0.123	0.294	0.543	0.479	3.279	2.078
200	0.091	0.265	0.545	0.481	4.252	2.303
300	0.082	0.294	0.557	0.490	3.890	2.206
400	0.135	0.265	0.541	0.478	4.208	2.254
500	0.082	0.324	0.571	0.501	3.842	2.360
600	0.074	0.324	0.567	0.499	8.708	2.823
700	0.082	0.265	0.566	0.497	5.619	2.461
800	0.090	0.412	0.575	0.504	3.791	2.533
900	0.082	0.382	0.581	0.509	4.970	2.617
1000	0.135	0.088	0.567	0.498	5.628	2.725
1100	0.122	0.206	0.558	0.491	4.959	2.569
1200	0.090	0.471	0.570	0.501	6.213	2.797
1300	0.081	0.471	0.575	0.505	5.212	2.924
1400	0.090	0.265	0.552	0.486	8.146	2.983
1500	0.121	0.294	0.569	0.500	7.503	3.361
1600	0.110	0.235	0.579	0.508	12.431	3.829
1700	0.121	0.353	0.555	0.488	7.495	3.401
1800	0.090	0.412	0.575	0.505	6.730	2.914
1900	0.121	0.118	0.586	0.513	5.675	3.121
2000	0.089	0.441	0.586	0.514	8.259	3.067
2100	0.099	0.353	0.568	0.499	5.225	2.752
2200	0.089	0.206	0.566	0.497	5.477	2.781
2300	0.120	0.265	0.578	0.507	6.407	3.096
2400	0.073	0.235	0.577	0.506	7.568	3.441
2500	0.081	0.294	0.569	0.500	3.368	2.932
2600	0.109	0.294	0.569	0.500	6.031	3.083
2700	0.066	0.294	0.584	0.512	5.406	3.092
2800	0.073	0.353	0.583	0.511	5.078	3.022
2900	0.120	0.265	0.560	0.492	5.377	2.672
3000	0.108	0.176	0.565	0.497	4.783	2.840
3100	0.098	0.353	0.591	0.518	5.137	2.839

3200	0.088	0.324	0.576	0.505	10.793	3.307
3300	0.119	0.353	0.571	0.502	4.116	2.549
3400	0.108	0.206	0.568	0.499	3.419	2.516
3500	0.119	0.147	0.574	0.504	3.794	2.603
3600	0.088	0.412	0.559	0.491	3.797	2.627
3700	0.097	0.206	0.551	0.485	3.151	2.577
3800	0.132	0.353	0.568	0.499	4.921	2.955
3900	0.119	0.265	0.568	0.499	3.609	2.817
4000	0.107	0.353	0.572	0.502	5.627	3.000
4100	0.119	0.235	0.553	0.487	4.563	2.796
4200	0.107	0.294	0.566	0.497	6.254	2.812
4300	0.097	0.324	0.562	0.494	4.315	2.625
4400	0.107	0.265	0.568	0.499	4.134	2.752
4500	0.118	0.265	0.574	0.503	3.301	2.408
4600	0.087	0.412	0.574	0.504	4.418	2.789
4700	0.118	0.235	0.586	0.513	6.177	2.896
4800	0.107	0.382	0.566	0.497	4.461	2.938
4900	0.096	0.324	0.572	0.502	4.301	2.821
5000	0.071	0.500	0.578	0.507	3.865	2.889
5100	0.144	0.235	0.563	0.495	5.903	2.725
5200	0.106	0.324	0.571	0.501	4.388	2.921
5300	0.064	0.324	0.576	0.506	4.543	2.818
5400	0.130	0.206	0.579	0.508	6.412	3.539
5500	0.096	0.353	0.560	0.493	5.528	3.236
5600	0.130	0.265	0.565	0.496	4.831	3.556
5700	0.078	0.324	0.585	0.513	6.829	3.707
5800	0.129	0.294	0.570	0.500	4.956	3.308
5900	0.143	0.206	0.576	0.505	6.014	3.573
6000	0.106	0.382	0.553	0.487	5.662	3.361
6100	0.117	0.382	0.559	0.492	4.768	3.280
6200	0.129	0.265	0.577	0.506	7.350	3.661
6300	0.117	0.265	0.557	0.490	7.303	3.593
6400	0.105	0.176	0.571	0.502	7.985	3.652
6500	0.116	0.176	0.555	0.488	7.606	3.442
6600	0.070	0.382	0.575	0.505	6.432	3.384
6700	0.116	0.324	0.584	0.512	5.888	3.369
6800	0.128	0.206	0.571	0.501	5.533	3.196
6900	0.116	0.294	0.560	0.492	2.858	3.128
7000	0.086	0.265	0.563	0.495	5.481	3.307
7100	0.095	0.441	0.547	0.483	3.484	2.789
7200	0.105	0.265	0.577	0.507	5.154	3.453
7300	0.095	0.382	0.566	0.497	5.195	3.380
7400	0.104	0.206	0.563	0.495	5.822	3.179
7500	0.115	0.235	0.582	0.511	4.457	3.493
7600	0.104	0.294	0.559	0.492	4.351	3.360
7700	0.094	0.176	0.570	0.500	4.253	3.443
7800	0.104	0.353	0.553	0.487	4.182	3.223
7900	0.140	0.353	0.544	0.480	4.418	3.122

8000	0.104	0.235	0.576	0.506	4.224	3.080
8100	0.094	0.412	0.569	0.500	4.151	3.187
8200	0.104	0.294	0.571	0.501	4.393	3.185
8300	0.077	0.382	0.576	0.505	5.460	3.217
8400	0.069	0.441	0.572	0.503	3.543	2.847
8500	0.114	0.206	0.560	0.493	4.656	2.848
8600	0.126	0.235	0.574	0.504	5.077	2.951
8700	0.076	0.324	0.569	0.499	4.023	3.052
8800	0.103	0.382	0.555	0.489	4.262	2.761
8900	0.076	0.324	0.578	0.507	5.279	3.057
9000	0.084	0.412	0.573	0.503	5.342	2.875
9100	0.139	0.176	0.570	0.501	5.277	3.136
9200	0.069	0.324	0.583	0.511	5.797	3.137
9300	0.076	0.353	0.587	0.515	6.134	3.126
9400	0.084	0.235	0.571	0.501	7.781	3.184
9500	0.093	0.294	0.539	0.476	4.833	2.833
9600	0.103	0.294	0.562	0.494	3.422	2.642
9700	0.093	0.324	0.579	0.508	6.756	3.212
9800	0.102	0.382	0.570	0.501	4.647	2.983
9900	0.113	0.353	0.557	0.490	4.012	3.122
10000	0.102	0.353	0.571	0.501	4.007	3.142
10100	0.092	0.382	0.575	0.504	3.759	3.265
10200	0.125	0.294	0.566	0.497	5.108	3.346
10300	0.092	0.412	0.567	0.498	6.056	3.430
10400	0.083	0.353	0.557	0.490	5.108	3.498
10500	0.092	0.324	0.559	0.492	4.759	3.311
10600	0.102	0.324	0.551	0.486	4.088	3.189
10700	0.075	0.324	0.552	0.486	5.820	3.262
10800	0.083	0.441	0.569	0.500	5.335	3.169
10900	0.112	0.265	0.567	0.498	4.868	2.945
11000	0.083	0.412	0.560	0.492	3.937	3.023
11100	0.092	0.294	0.559	0.492	6.301	3.205
11200	0.101	0.412	0.569	0.500	5.468	3.578
11300	0.091	0.147	0.553	0.487	7.472	3.530
11400	0.123	0.382	0.553	0.487	9.313	3.872
11500	0.075	0.294	0.580	0.509	7.549	3.552
11600	0.101	0.353	0.575	0.504	5.388	3.448
11700	0.091	0.324	0.578	0.507	7.301	3.680
11800	0.101	0.412	0.574	0.504	7.779	3.897
11900	0.091	0.265	0.585	0.512	7.342	3.499
12000	0.100	0.294	0.576	0.506	5.478	3.279
12100	0.111	0.206	0.557	0.490	4.857	3.426
12200	0.123	0.265	0.568	0.499	4.810	3.037
12300	0.165	0.176	0.578	0.507	5.186	3.085
12400	0.122	0.265	0.572	0.503	5.432	3.389
12500	0.111	0.265	0.591	0.518	8.312	3.604
12600	0.082	0.294	0.589	0.516	7.291	3.703
12700	0.110	0.353	0.584	0.512	7.229	3.762

12800	0.100	0.500	0.556	0.490	7.251	3.867
12900	0.074	0.441	0.550	0.485	7.878	3.539
13000	0.122	0.176	0.552	0.487	5.042	3.332
13100	0.110	0.235	0.575	0.504	6.429	3.405
13200	0.122	0.382	0.564	0.496	3.807	2.732
13300	0.110	0.412	0.565	0.497	4.150	2.973
13400	0.099	0.206	0.559	0.492	5.028	3.072
13500	0.090	0.294	0.569	0.500	4.739	3.148
13600	0.081	0.382	0.539	0.476	6.190	3.098
13700	0.109	0.265	0.558	0.491	4.946	3.189
13800	0.099	0.382	0.577	0.506	9.106	3.537
13900	0.109	0.500	0.569	0.500	4.980	2.950
14000	0.121	0.382	0.564	0.496	4.839	2.920
14100	0.089	0.441	0.548	0.483	2.667	2.386
14200	0.099	0.235	0.558	0.491	3.711	2.685
14300	0.109	0.294	0.564	0.496	4.006	2.805
14400	0.081	0.294	0.573	0.503	5.226	3.131
14500	0.133	0.235	0.555	0.489	4.335	2.956
14600	0.098	0.176	0.575	0.505	6.851	2.945
14700	0.133	0.382	0.555	0.489	4.895	2.940
14800	0.098	0.441	0.554	0.488	5.564	2.907
14900	0.132	0.235	0.562	0.494	6.448	2.918
15000	0.098	0.324	0.586	0.514	4.673	2.938
15100	0.089	0.353	0.571	0.502	4.623	2.984
15200	0.098	0.471	0.566	0.497	4.947	3.134
15300	0.072	0.294	0.570	0.501	5.543	3.637
15400	0.098	0.294	0.578	0.507	9.513	3.585
15500	0.088	0.235	0.547	0.483	4.762	3.227
15600	0.097	0.176	0.591	0.518	4.948	3.248
15700	0.072	0.265	0.575	0.505	6.981	3.258
15800	0.097	0.235	0.575	0.504	7.607	3.209
15900	0.107	0.353	0.581	0.510	5.143	2.949
16000	0.119	0.176	0.574	0.504	4.552	2.969
16100	0.088	0.324	0.542	0.478	3.578	2.552
16200	0.097	0.382	0.564	0.496	5.272	3.061
16300	0.088	0.294	0.582	0.511	6.059	3.045
16400	0.097	0.353	0.555	0.489	4.308	2.995
16500	0.107	0.353	0.568	0.499	3.556	2.802
16600	0.079	0.471	0.574	0.504	4.767	3.196
16700	0.130	0.294	0.566	0.498	4.619	3.068
16800	0.144	0.176	0.573	0.503	4.498	3.118
16900	0.107	0.588	0.571	0.502	4.286	2.898
17000	0.079	0.382	0.581	0.510	5.948	3.436
17100	0.106	0.353	0.583	0.511	6.545	3.271
17200	0.118	0.294	0.566	0.497	5.160	3.489
17300	0.106	0.294	0.557	0.490	5.342	2.811
17400	0.117	0.382	0.565	0.497	8.384	3.103
17500	0.130	0.176	0.569	0.500	5.331	3.185

17600	0.117	0.206	0.556	0.489	4.217	3.047
17700	0.071	0.412	0.564	0.496	6.887	3.204
17800	0.096	0.441	0.563	0.495	5.766	3.154
17900	0.086	0.294	0.573	0.503	4.884	3.046
18000	0.096	0.235	0.570	0.501	5.935	3.369
18100	0.129	0.324	0.546	0.482	3.014	3.211
18200	0.142	0.206	0.569	0.500	3.728	3.320
18300	0.129	0.176	0.550	0.485	4.560	3.216
18400	0.142	0.265	0.573	0.503	3.674	3.467
18500	0.086	0.441	0.573	0.503	4.557	3.532
18600	0.095	0.147	0.558	0.491	5.833	3.930
18700	0.128	0.235	0.542	0.478	4.154	3.466
18800	0.142	0.235	0.555	0.489	5.139	3.758
18900	0.105	0.382	0.551	0.485	4.015	3.631
19000	0.141	0.294	0.560	0.493	3.749	3.494
19100	0.128	0.412	0.562	0.494	4.918	3.438
19200	0.077	0.529	0.564	0.496	4.911	3.849
19300	0.085	0.265	0.566	0.498	5.520	3.711
19400	0.141	0.294	0.525	0.466	2.645	3.465
19500	0.127	0.324	0.550	0.485	3.221	3.898
19600	0.115	0.471	0.545	0.481	5.170	3.919
19700	0.104	0.294	0.576	0.505	3.820	4.077
19800	0.141	0.235	0.549	0.484	3.758	4.400
19900	0.127	0.324	0.546	0.481	4.656	4.628
20000	0.115	0.382	0.566	0.498	5.228	4.893

This session did 20.000 iterations in 48 seconds

10.3 Results of the Extended Price Sensitivity Meter

		Question 29 Next, I will show you the description of a bus trailer. Please read the description carefully. - Which price would you consider as inexpensive for this product?	Question 30 - And which price seems to be expensive but yet acceptable?	Question 31 - Which price seems to be too high, that a purchase would be out of question?	Question 32 - And which price is too low, that you would doubt the quality of the trailer?	Question 33 - Assuming the price of the trailer is € ... What is the likelihood of you buying it?	Question 34 Assuming the price of the trailer is € ... What is the likelihood of you buying it?	Question 36 Next, I will show you the description of another bus trailer. Please read the description carefully. - Which price would you consider as inexpensive for this product.	Question 37 - And which price seems to be expensive but yet acceptable?	Question 38 - Which price seems to be too high, that a purchase would be out of question?	Question 39 - And which price is too low, that you would doubt the quality of the trailer?	Question 40 - Assuming the price of the trailer is € ... What is the likelihood of you buying it?	Question 41 Assuming the price of the trailer is € ... What is the likelihood of you buying it?
N	Valid	60	60	60	60	60	60	60	60	60	60	60	60
Mean		8640,38	11472,42	15006,40	5309,37	5,97	7,78	5426,70	7134,18	9167,53	3410,87	5,87	7,65
Standard error (of the mean)		889,135	1118,949	1566,551	614,892	,440	,349	615,725	672,765	792,761	393,321	,433	,363
Standard deviation		6887,207	8667,340	12134,451	4762,930	3,410	2,706	4769,386	5211,214	6140,704	3046,648	3,357	2,815

Frequency table				
Question 29 Next, I will show you the description of a bus trailer. Please read the description carefully. Which price would you consider as inexpensive for this product?				
		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0
	800	1	1,7	6,7
	1000	3	5,0	11,7
	1200	2	3,3	15,0
	2000	3	5,0	20,0
	2222	1	1,7	21,7
	3000	4	6,7	28,3
	4000	3	5,0	33,3
	4500	1	1,7	35,0
	5000	5	8,3	43,3
	6000	3	5,0	48,3
	8000	5	8,3	56,7
	9500	1	1,7	58,3
	10000	6	10,0	68,3
	11000	2	3,3	71,7
	12000	1	1,7	73,3
	14000	1	1,7	75,0
	15000	9	15,0	90,0
	20000	2	3,3	93,3
	25000	4	6,7	100,0
	Total	60	100,0	
Question 30 And which price seems to be expensive but yet acceptable?				
		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0
	800	1	1,7	6,7
	2000	1	1,7	8,3
	3000	4	6,7	15,0
	3500	3	5,0	20,0
	4000	2	3,3	23,3
	4100	1	1,7	25,0
	5000	3	5,0	30,0
	5200	1	1,7	31,7
	5500	1	1,7	33,3
	6000	2	3,3	36,7
	6500	1	1,7	38,3
	7000	1	1,7	40,0

	8000	3	5,0	45,0
	9600	1	1,7	46,7
	10000	3	5,0	51,7
	11000	3	5,0	56,7
	11200	1	1,7	58,3
	12000	1	1,7	60,0
	12500	1	1,7	61,7
	14000	2	3,3	65,0
	15000	4	6,7	71,7
	16000	2	3,3	75,0
	17000	1	1,7	76,7
	18000	4	6,7	83,3
	20000	3	5,0	88,3
	22000	1	1,7	90,0
	22222	2	3,3	93,3
	25000	1	1,7	95,0
	32000	1	1,7	96,7
	35000	1	1,7	98,3
	40000	1	1,7	100,0
	Total	60	100,0	

Question 31 Which price seems to be too high, that a purchase would be out of question?

		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0
	1100	1	1,7	6,7
	2100	1	1,7	8,3
	3000	1	1,7	10,0
	3650	1	1,7	11,7
	4000	2	3,3	15,0
	4500	2	3,3	18,3
	5000	1	1,7	20,0
	6000	1	1,7	21,7
	7000	3	5,0	26,7
	7500	1	1,7	28,3
	8000	1	1,7	30,0
	9000	1	1,7	31,7
	10000	8	13,3	45,0
	10500	1	1,7	46,7
	11200	1	1,7	48,3
	12000	2	3,3	51,7
	14000	1	1,7	53,3
	15000	7	11,7	65,0
	16000	1	1,7	66,7
	16500	1	1,7	68,3
	18000	2	3,3	71,7
	19500	1	1,7	73,3
	20000	3	5,0	78,3

	21000	1	1,7	80,0
	23000	1	1,7	81,7
	25000	3	5,0	86,7
	26000	1	1,7	88,3
	30000	2	3,3	91,7
	33333	1	1,7	93,3
	35000	1	1,7	95,0
	40000	1	1,7	96,7
	41000	1	1,7	98,3
	70000	1	1,7	100,0
	Total	60	100,0	

Question 32 And which price is too low, that you would doubt the quality of the trailer?

		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0
	100	1	1,7	6,7
	500	2	3,3	10,0
	700	1	1,7	11,7
	1000	4	6,7	18,3
	1111	1	1,7	20,0
	1150	1	1,7	21,7
	1500	3	5,0	26,7
	2000	6	10,0	36,7
	2500	1	1,7	38,3
	3000	3	5,0	43,3
	3500	1	1,7	45,0
	4000	2	3,3	48,3
	4500	1	1,7	50,0
	5000	8	13,3	63,3
	5500	1	1,7	65,0
	6000	3	5,0	70,0
	6500	1	1,7	71,7
	8000	4	6,7	78,3
	9000	1	1,7	80,0
	10000	6	10,0	90,0
	12000	1	1,7	91,7
	13500	1	1,7	93,3
	15000	2	3,3	96,7
	20000	2	3,3	100,0
	Total	60	100,0	

Question 33 Assuming the price of the trailer is € … What is the likelihood of you buying it?

		Frequency	Per cent	Cumulated per cent
Valid	100% = definitely	5	8,3	8,3
	90%	2	3,3	11,7

	80%	13	21,7	33,3
	70%	6	10,0	43,3
	60%	3	5,0	48,3
	50%	10	16,7	65,0
	40%	2	3,3	68,3
	30%	2	3,3	71,7
	20%	2	3,3	75,0
	10%	2	3,3	78,3
	0% = definitely not	13	21,7	100,0
	Total	60	100,0	

Question 34 Assuming the price of the trailer is € … What is the likelihood of you buying it?

		Frequency	Per cent	Cumulated per cent
Valid	80%	4	6,7	6,7
	70%	6	10,0	16,7
	60%	4	6,7	23,3
	50%	9	15,0	38,3
	40%	3	5,0	43,3
	30%	5	8,3	51,7
	20%	9	15,0	66,7
	10%	5	8,3	75,0
	0% = definitely not	15	25,0	100,0
	Total	60	100,0	

Question 36 Next, I will show you the description of another bus trailer.
Please read the description carefully.
Which price would you consider as inexpensive for this product.

		Frequency	Per cent	Cumulated per cent
Valid	0	3	5,0	5,0
	1	2	3,3	8,3
	500	2	3,3	11,7
	600	2	3,3	15,0
	1000	2	3,3	18,3
	1500	2	3,3	21,7
	2000	5	8,3	30,0
	2500	2	3,3	33,3
	2600	1	1,7	35,0
	3000	4	6,7	41,7
	3500	2	3,3	45,0
	4000	2	3,3	48,3
	4500	3	5,0	53,3
	5000	5	8,3	61,7
	6000	4	6,7	68,3
	7000	3	5,0	73,3
	8000	4	6,7	80,0
	9800	1	1,7	81,7
	10000	4	6,7	88,3

	12000	1	1,7	90,0
	12500	1	1,7	91,7
	13000	1	1,7	93,3
	15000	1	1,7	95,0
	18000	1	1,7	96,7
	18500	1	1,7	98,3
	19500	1	1,7	100,0
	Total	60	100,0	

Question 37 And which price seems to be expensive but yet acceptable?

		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0
	600	1	1,7	6,7
	1000	1	1,7	8,3
	1650	1	1,7	10,0
	1900	1	1,7	11,7
	2500	1	1,7	13,3
	2600	1	1,7	15,0
	2800	1	1,7	16,7
	3000	3	5,0	21,7
	3500	1	1,7	23,3
	4000	5	8,3	31,7
	4500	2	3,3	35,0
	5000	10	16,7	51,7
	5500	1	1,7	53,3
	6000	3	5,0	58,3
	6500	1	1,7	60,0
	7000	2	3,3	63,3
	8000	5	8,3	71,7
	10000	4	6,7	78,3
	11000	3	5,0	83,3
	12000	1	1,7	85,0
	13000	1	1,7	86,7
	14000	1	1,7	88,3
	15000	1	1,7	90,0
	16000	1	1,7	91,7
	18000	1	1,7	93,3
	18500	1	1,7	95,0
	20000	3	5,0	100,0
	Total	60	100,0	

Question 38 Which price seems to be too high, that a purchase would be out of question?

		Frequency	Per cent	Cumulated per cent
Valid	0	2	3,3	3,3
	1	1	1,7	5,0

	750	1	1,7	6,7
	2000	1	1,7	8,3
	2600	1	1,7	10,0
	3500	1	1,7	11,7
	4000	4	6,7	18,3
	4500	1	1,7	20,0
	4600	1	1,7	21,7
	5000	6	10,0	31,7
	6000	5	8,3	40,0
	6500	1	1,7	41,7
	7000	5	8,3	50,0
	7001	1	1,7	51,7
	7100	1	1,7	53,3
	8000	4	6,7	60,0
	8500	1	1,7	61,7
	10000	4	6,7	68,3
	11000	1	1,7	70,0
	12000	2	3,3	73,3
	13000	2	3,3	76,7
	14500	1	1,7	78,3
	15000	3	5,0	83,3
	16500	1	1,7	85,0
	17000	1	1,7	86,7
	18000	2	3,3	90,0
	19000	1	1,7	91,7
	20000	2	3,3	95,0
	21000	1	1,7	96,7
	25000	2	3,3	100,0
	Total	60	100,0	

Question 39 And which price is too low, that you would doubt the quality of the trailer?

		Frequency	Per cent	Cumulated per cent
Valid	0	3	5,0	5,0
	1	2	3,3	8,3
	100	1	1,7	10,0
	200	2	3,3	13,3
	400	1	1,7	15,0
	500	4	6,7	21,7
	1000	2	3,3	25,0
	1500	6	10,0	35,0
	1850	1	1,7	36,7
	2000	5	8,3	45,0
	2400	1	1,7	46,7
	3000	8	13,3	60,0
	3500	1	1,7	61,7
	4000	4	6,7	68,3
	4500	1	1,7	70,0
	5000	8	13,3	83,3

	6000	1	1,7	85,0
	7000	1	1,7	86,7
	7500	1	1,7	88,3
	8000	3	5,0	93,3
	9000	1	1,7	95,0
	10000	1	1,7	96,7
	11000	1	1,7	98,3
	14000	1	1,7	100,0
	Total	60	100,0	

Question 40 Assuming the price of the trailer is € … What is the likelihood of you buying it?

		Frequency	Per cent	Cumulated per cent
Valid	100% = definitely	4	6,7	6,7
	90%	4	6,7	13,3
	80%	10	16,7	30,0
	70%	8	13,3	43,3
	60%	6	10,0	53,3
	50%	9	15,0	68,3
	40%	2	3,3	71,7
	30%	1	1,7	73,3
	20%	2	3,3	76,7
	0% = definitely not	14	23,3	100,0
	Total	60	100,0	

Question 41 Assuming the price of the trailer is € … What is the likelihood of you buying it?

		Frequency	Per cent	Cumulated per cent
Valid	100% = definitely	1	1,7	1,7
	90%	2	3,3	5,0
	80%	2	3,3	8,3
	70%	5	8,3	16,7
	60%	2	3,3	20,0
	50%	10	16,7	36,7
	40%	6	10,0	46,7
	30%	6	10,0	56,7
	20%	8	13,3	70,0
	10%	2	3,3	73,3
	0% = definitely not	16	26,7	100,0
	Total	60	100,0	